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SUMMER 1994

ROTUNDA

the magazine of the Royal Ontario Museum

GOLD FIT FOR A QUEEN

CATACLYSMIC INSIGHTS INTO DINOSAUR EXTINCTION

LIFE IN ICE AGE ONTARIO

SMOKING UP

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ROTUNDA

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Cover
A detail of a gold bracelet from Meroe shows the goddess Mut with her protective winged arms outspread. For the story on Meroe and its gold turn to page 18. PHOTOGRAPH COURTESY THE METROPOLITAN MUSEUM OF ART, NEW YORK.

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Editor's Note

Cleopatra was not the only queen to have challenged the Romans in Egypt. A queen of Meroe launched a bold attack in 25 BC. (The Romans won that one too.) Archaeologists are learning more about the culture of Meroe, which flourished in Nubia, now Sudan, from 300 BC to AD 350. Greatly influenced by Egyptian culture, the Meroites had, nevertheless, very distinct local artistic, social, and cultural traditions. Modern scholars often have been overwhelmed by the Egyptian aspects of Nubian civilization, and have neglected those that are indigenous but less accessible. In the cover story, Krzysztof Grzymski, a curator in the ROM's Egyptian Department, writes about the political history of Meroe, including the controversy over the identity of the queen who challenged Rome. She may have been Amanishakheto, whose jewellery is featured in the fascinating *Gold of Meroe* exhibition on display until 28 August at the Museum.

While the question of the identity of a Nubian queen, albeit fascinating, has not captured vast attention, the debate over the cause of the mass extinction of dinosaurs certainly has. Many scientists speculate that a huge asteroid crashed to Earth about 65 million years ago, and that the cataclysmic environmental changes brought about by this event caused the demise of more than 50 per cent of all life on the planet, including the dinosaurs. Thomas Krogh, a geochronologist at the ROM, has fairly substantial proof that these scientists are right. Sandra Kamo, a colleague, explains how evidence has been gathered through the dating of zircon dust found at the geological layer known as the K/T boundry.

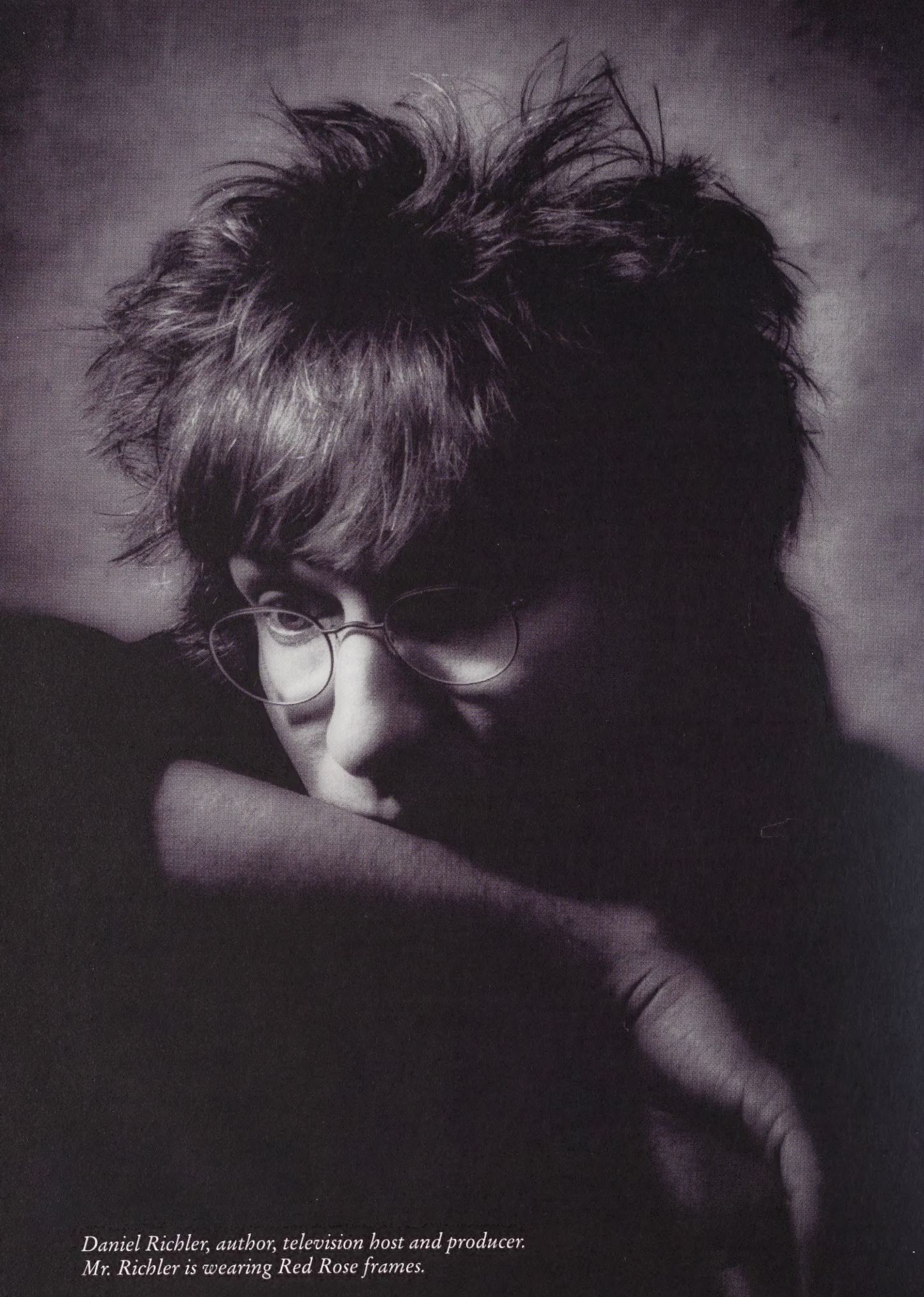
Modern technology is also helping archaeologists learn more about Indian life in Ontario at the end of the last Ice Age, more than 10,000 years ago. While archaeologists working in such locations as Egypt or Nubia find a wealth of ancient artifacts and documents to study, sites relating to prehistoric life in North America release a dearth of objects that are often only detectable by a trained eye. Such is the case of the Fisher Site, in Ontario, described by ROM archaeologist Peter Storck. Storck and his colleagues are using conventional methods as well as a new technique—use-wear analysis—on stone tools to reveal in amazing detail how Indians lived in that region thousands of years ago.

In February the Museum opened the new Sigmund Samuel Canadiana Gallery. The collection, so wisely and generously founded, donated, and endowed by Sigmund Samuel, finally has a permanent home that combines the best aspects of the former displays in the Canadiana building and the main building with a comprehensive story line. I take you on a tour of the gallery in "Gallery Glimpses." Not only is the history of early European settlement in Canada more clearly expressed through the new gallery, it is also put in the greater context of settlement from prehistoric times to the present through its place on the Canadian Heritage Floor.

From stories that cover the death of the dinosaurs to the secrets of Meroe and life in Canada during prehistoric and pioneer times, I hope you enjoy reading this issue of *Rotunda*.

Sandra Shaul

Sandra Shaul



Daniel Richler, author, television host and producer.
Mr. Richler is wearing Red Rose frames.

The babysitter in a box. The glass teat. The electronic nanny. Television has muscled in on the family. That's why people grieved when Barbara Frum died; she was in our living rooms almost nightly for ten years - more often than our parents, even - and we felt we'd miss her like a relative.

But as we hurtle towards an age of independent information, I wonder what common ground we'll have left.

As new signals and technologies permit us to shut out Things We Don't Like, we risk breaking up into weird tribes. Camped out in the

How I See Television.

Now TV's about to explode, go digital, merge with the information superhighway. Soon there'll be a channel for everyone and their dog.

In a way, I'm excited. I can't wait for the High Times Channel. Or the Right Wing Paranoia Network.

On the other hand, I worry about the fracturing of the family. And of community.

We used to watch television as a family. Sure, we fought over the remote, but we shared some common ground.

When we grazed up and down the channels together, we used to stumble over the unexpected. That may have been disagreeable at times, but it was actually a pretty good exercise for a working democracy: it forced us to consider one another.

darkened canyons of the city, huddled around our favourite shows. Like those Cheers fans who filled SkyDome.

Or on a more serious level: The politically polarized, the intolerant and the mutually uncomprehending.

We're bad enough already - a country of squabbling constituencies and competing complaints. To some degree TV used to link up this vast and multifaceted land. But when the TV personalities of the 21st century die - or let's say, for the sake of argument, Canada dies - no one may notice. No one may care.

Too gloomy? Switch to the Optimist's Channel. Where there are no new taxes. Summer begins in January. And the Brady Bunch still lives together.

Smoking Up

ONCE I LET A SALESMAN FAST-TALK me into a "Texas-style" smoker, a contraption that resembled a little yellow spaceship. He promised the sort of succulent fare and deep smoke flavour that makes Texans taller than Torontonians. I bought it. I bought wood chips and a roast about the size of the flatiron building. I invited guests, to be dazzled by my acumen.

As they arrived, the little wonder was already smoking. I served drinks and appetizers. At the appointed time, I went to fetch the roast. It sat stone-cold in a charcoal mist. An hour passed. The guests fidgeted. Another hour passed. The guests starved. Another passed. The guests went home, where they might find an honest sandwich. At midnight, I sat alone with the barely tanned roast. The falsetto curses emanating from me that night still give the neighbours nightmares.

As it turned out, I had failed miserably at something humankind has been doing since the Stone Age. The ancients used smoke as a preservative without knowing the specifics: it contains as many as 200 different components. Some of these kill micro-organisms, while others prevent fats and oils from turning rancid.

Along the way, we also discovered the powerfully sensual chemistry between food and smoke. A little smoke imbues meat, fish, fowl, vegetables and even cheeses with tantalizing dimension.

There are two ways of smoking: cold and hot. The former cures, but doesn't cook, food at low temperatures over a period as long as two weeks. Smoked salmon is cold-smoked. So are firm-bodied fish such as char, swordfish, sturgeon, and mackerel. Unless you have a large budget and time on your hands, leave them to the commercial smokehouses.

Hot-smoking is better understood as smoke-cooking. Here smoke is an *ingredient*, not a process, with flavour as its purpose. It can be done in anything from a covered barbecue to a thermostatically controlled smoke oven, but most importantly, anyone can do it. Now smoke is Everyman's cuisine.

Industrial smokers are available, but only a tad cheaper than a nuclear submarine. Backyard varieties, including the dread "Texas style," are popular in the United States. Newly proliferating in cookware stores are portable stovetop units that use wood shavings and provide surpris-

ILLUSTRATION BY HELEN D'SOUZA

ingly intense flavour in minutes.

If you are a do-it-yourselfer, do it yourself. The *Home Book of Smoke Cooking Meat, Fish & Game* by Jack Sleight and Raymond Hull (Stackpole Books, $14.95) is a scholarly treatise that describes a number of smokers, from a wheelbarrow to a makeshift shed in which you might smoke a whole buffalo.

My wife once built a smoker from a metal garbage can. She cut out the bottom and fitted it with an element to fire the wood chips. She installed a wire rack near the top to contain the food a healthy distance from the heat. She punched holes in the lid for the smoke to escape. Miracles emerged from that garbage can.

A closed barbecue is fine for roasts and meats, which demand enough cooking time for the smoke to make its point. Fish and shellfish require a longer period at lower temperatures to absorb smoke flavour without overcooking, and that's when temperature controls come into play.

The smoke itself can come from any hardwood, but not evergreens, which contain a distasteful pitch. Wood chips—the superstars are hickory and mesquite—are commonly found at supermarkets. Yet more ingenious sources of smoke range from corn cobs to tea.

John Higgins, head chef at Toronto's King Edward Hotel, has been smoking fillet of Atlantic salmon over teabags for years. Grapevine cuttings from Niagara vineyards are sold at Inniskillin wine boutiques in Ontario. Scattered over the coals in the last few minutes of cooking, they impart a subtle sweetness to fish and fowl dishes.

Now, what to smoke? Smoke-cooked salmon fillet or steak—Atlantic for rich buttery flavour and texture—makes an excellent main course. Oysters, shrimps, and scallops are sensational surprises. Birds such as duck, quail, and guinea fowl absorb smoke as readily. Once you've got the hang of it, you may turn to tomatoes, corn, peppers, eggplants, cheeses, and olives.

I'm fond of greeting summer

with an inventive succotash of smoked corn mixed with asiago cheese and jalapeno peppers—and the neighbours are sleeping better these nights.

SMOKED CORNISH HEN WITH WHOLE GARLIC-LEMON SAUCE

This recipe is especially successful because Cornish hen, although a great presentation piece, doesn't have a lot of flavour to begin with. The clean slate allows smoke to have its way with the bird.

Ingredients

- 4 Cornish game hens
- 2 lemons
- 125 ml (1/2 cup) melted butter
- 5 ml (1 tsp) fresh ground pepper
- 24 large garlic cloves
- 30 ml (2 tbsp) melted butter
- 500 ml (2 cups) homemade chicken stock
- 250 ml (1 cup) red wine
- 30 ml (2 tbsp) cornstarch
- fresh parsley for garnish

Method

Rinse the hens in cold water and pat dry both inside and out with paper towel. Stuff 1/4 lemon in the cavity of each. Tie the leg bones together in front of the breast cavity. Place the hens in a shallow oven-proof pan.

Combine 125 ml (1/2 cup) melted butter, ground pepper, and the juice of 1/2 lemon to make a basting sauce.

Wrap wood chips in aluminum foil. Heat one side of the barbecue grill to high. Place the packet of wood chips on the coals. Close the lid. When the chips begin to smoke (10 to 15 minutes), reduce the heat to low. Heat the other grill to reach an interior temperature of 190 degrees C (375 degrees F).

Place the pan containing the hens on the second grill. Close the lid and smoke-cook, basting frequently until done (45-50 minutes). Rotate the pan occasionally to ensure even smoking.

Meanwhile, prepare the sauce by blanching the garlic cloves for five minutes in rapidly boiling water. Remove from the heat and rinse with cold water. Peel the garlic.

In a deep pan or pot, sauté the cloves in the two tablespoons of butter until golden-brown. Add the chicken stock and wine and simmer until the mixture is reduced to half. Remove from the heat. Dissolve the cornstarch in an equal amount of water. Add to the broth. Bring the mixture to a boil, stirring constantly, then reduce the heat and simmer for two minutes.

Just before serving, remove the lemons from the cavity of the hens. Place the hens on heated serving plates. Pour the pan juices into the hot sauce mixture. Taste the sauce and add just enough juice from the remaining lemon half to create a slightly tart undertone. Spoon the garlic cloves and a small amount of sauce on each plate. Garnish with fresh parsley. Serve the remaining sauce on the side. Serves four.

JEREMY FERGUSON
Jeremy Ferguson is a food and travel writer based in Toronto

The Vision Helmet, ***a marble sculpture created by David M. General of the Six Nations Reserve, was recently acquired by the Ethnology Department.***

Contemporary Sculpture Acquired For Ethnology Collection

Virtual reality is one of the most exciting and useful tools that technology has produced. Its potential value to science and its impact on the arts have yet to be fully realized. However, virtual reality can be so seductive that we are tempted to forsake our own powers of imagination and passively accept the virtual imagery made available to us.

The Vision Helmet *is an affirmation of the spirit of imagination, an acknowledgement that the vision of an individual may have in some way influenced the formulation of rituals and ceremonies that we proudly hold as our ancestral traditions—our heritage. It is a reminder that we all possess the capabilities of time travel, transformation, and interactive realities. Simply by closing our eyes we don* The Vision Helmet.

DAVID M. GENERAL

THE VISION HELMET IS THE MOST RECENT addition to the Ethnology Department's collection of works by contemporary artists of First Nations ancestry. Created by sculptor David M. General of the Six Nations Reserve at Brantford, Ontario, the sculpted mask is inspired by modern virtual reality technology. It consists of three pieces: a base representing a human head, a helmet in the form of an eagle's head, and a wing tip representing the glove used as a hand control in virtual reality technology. Carrara marble was carved to create the eagle head and wing tip, and Madoc marble was used for the base.

The human head, which is deeply carved, is represented as sightless. In David General's words, these features symbolize "our willingness not to allow ourselves to imagine anymore...to allow others to package our thoughts for us." The eagle head "helmet" and wing tip "glove" are references to the Iroquoian symbol of the "far seeing eagle." It is an important symbol that David General has often used in his art, explaining that it is through repeated use of such powerful symbols that we learn to understand them more fully. In the present work it is a reminder that vision is forward looking and that we should not get so caught up

PHOTOGRAPH BY BRIAN BOYLE

in collating and disseminating information about the past that we forget to look to the future. "We must remember that someone in our midst knows exactly where we should be and what is right. Others will build the infrastructures needed to get us there."

David General began sculpting in the late 1970s. He produces both representational and abstract works in stone, wood, and bronze. Although his Iroquoian heritage influences his art, he also cites West Coast artist Bill Reid and British sculptor Henry Moore as sources of inspiration. Each year he creates one stone mask based on a specific theme. *The Vision Helmet* was created in 1993 after the virtual reality theme was suggested by a fellow artist's comment that Indian people have, through visions, always been able to achieve naturally the results produced by virtual reality technology.

General's work has been exhibited across Canada and in the United States. He was included in the major exhibition *In the Shadow of the Sun: Contemporary Canadian Indian and Inuit Art,* organized by the Canadian Museum of Civilization. His work is included in major private, public, and corporate collections.

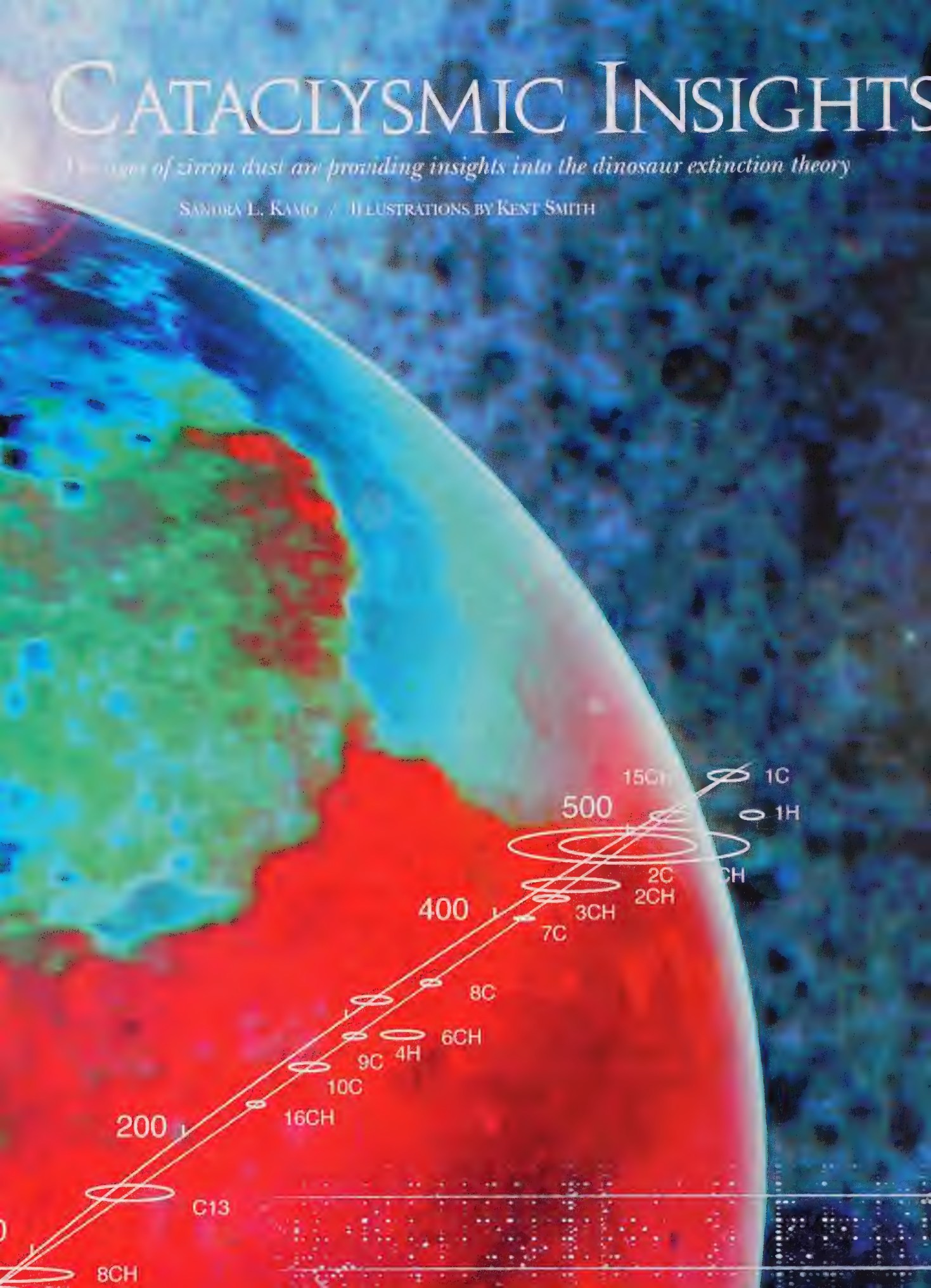
More than 30 years ago, the ROM's Ethnology Department began collecting works by contemporary First Nations artists, with the emphasis on works by Ontario artists. The collection forms an important artistic record that encompasses both traditional cultural values and social and political commentary from First Nations' perspectives. *The Vision Helmet* was purchased with the generous assistance of the ROM Reproductions Fund of the Royal Ontario Museum Foundation. It brings new breadth to the collection through its focus on the future and on human relationships that transcend cultural boundaries.

TRUDY NICKS
Trudy Nicks is associate curator in charge of the Ethnology Department, Royal Ontario Museum

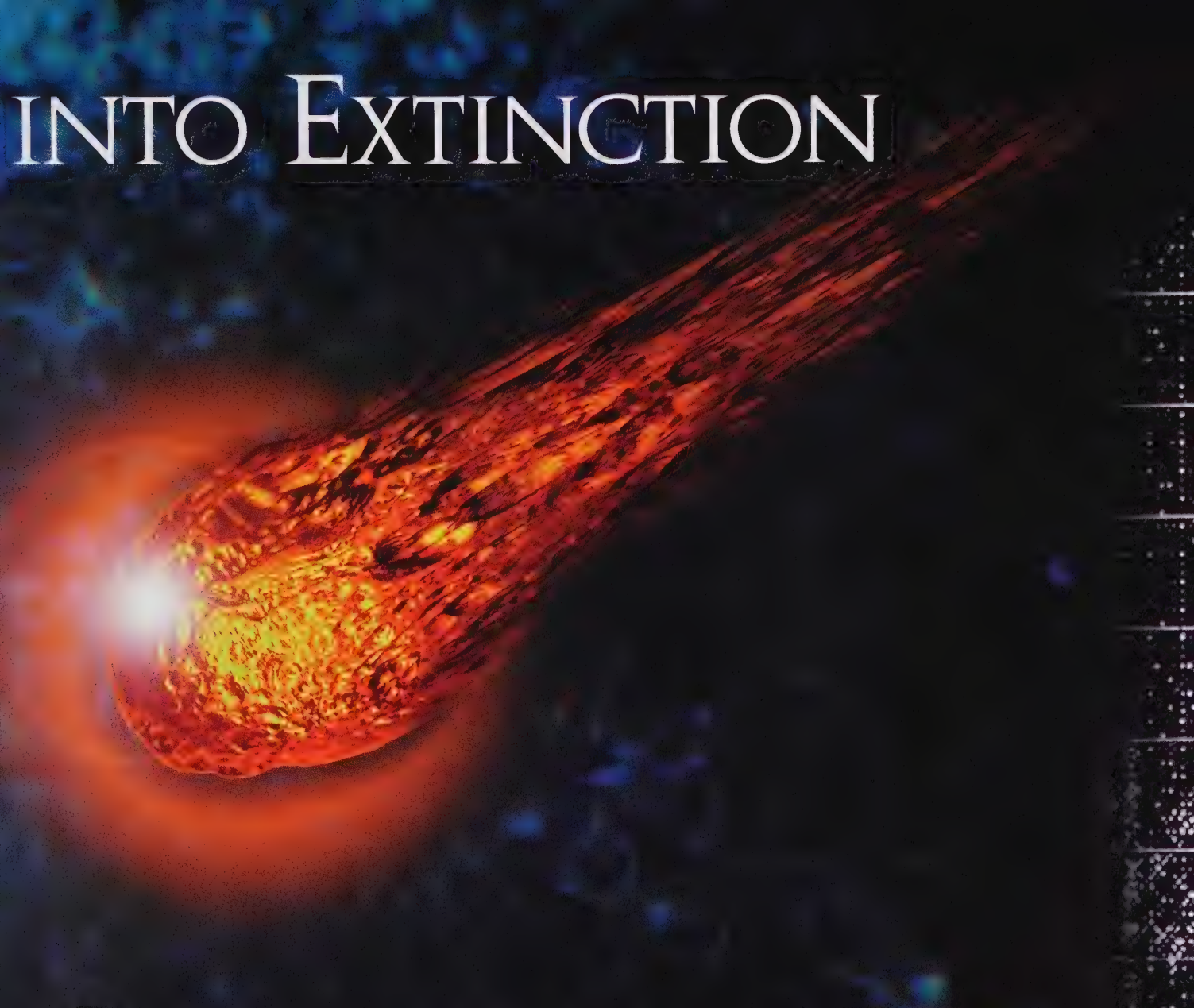
Cataclysmic Insights

Analyses of zircon dust are providing insights into the dinosaur extinction theory

Sandra L. Kamo / Illustrations by Kent Smith



INTO EXTINCTION



PERHAPS ONE OF THE GREATEST GEOLOGICAL DEBATES EVER is over the cause of a mass extinction of more than half of all life on Earth, including the dinosaurs. Over the past 15 years, a great many scientists have been intrigued by the theory that a giant asteroid hit the planet, causing untold devastation to the biosphere, which in turn triggered the mass extinction. Such a scenario would have included a global blanket of rock dust shrouding Earth in darkness, as well as fires, acid rain, and greenhouse warming.

Sandra Kamo is a researcher associated with the Geology Department, Royal Ontario Museum

The theory and the debate centre around the origin of a one-cm-thick clay layer, found worldwide, that marks the transition from the Cretaceous period, when dinosaurs still flourished, to the Tertiary period when they ceased to exist. It is referred to by geologists as the K/T boundary. Dr. Walter Alvarez, a geologist, and his father, Dr. Luis Alvarez, a physicist, along with their colleagues from the University of California at Berkeley, began the debate in 1978 when they discovered an unusually high concentration of the element iridium in the clay layer at a location outside the northern Italian town of Gubbio. In 1980 they published their discovery and made the controversial suggestion that, because iridium is rare in Earth's crust but enriched in extraterrestrial material, Earth had been struck by a giant asteroid about 10 kilometres in diameter. While this group was not the first to advance such a theory, it was the first to present compelling evidence for it.

The theory and the debate centre around the origin of a one-cm-thick clay layer called the K/T boundary

Iridium is depleted in Earth's crust because it is a siderophile or iron-loving element and was concentrated along with iron into the planet's core as Earth's structure developed very early in its history. The Alvarez theory has been the focus of an unprecedented amount of research.

Impact theorists propose that a 10-kilometre-diameter meteorite striking Earth would do so with such force (some have compared its magnitude to that of the detonation of one thousand times the world's entire nuclear arsenal) that the compressed continental crust would explode, sending a mixture of melted and vaporized meteoritic and crustal target rock material high into the upper atmosphere. Dust-sized rock particles would have settled out around the globe forming the K/T boundary layer, or ejecta blanket. The layer is enriched not only in iridium, but also in minerals that have shock-induced textures found only at impact-related sites, and glass spherules, called tektites, formed by rock that melted upon impact and that was subsequently quenched when blasted into the cold atmosphere. These key pieces of evidence, found in the same stratigraphic layer at hundreds of localities worldwide, represent the earliest and strongest lines of evidence in support of the impact hypothesis.

While evidence supporting the theory has continued to emerge, an alternative hypothesis—massive volcanism on a cataclysmic scale—has the support of other scientists. Some researchers have suggested that mass extinctions throughout the geological time scale are cyclical and are relat-

THE URANIUM-LEAD METHO

Geochronology is the science of determining absolute ages of events in Earth's geological past through the use of a process based on the rate of radioactive decay of unstable parent isotopes into stable daughter isotopes. This process is one of the few methods by which it is possible to probe thousands of millions of years into Earth's history to obtain some solid information.

Geology is largely based on inference and interpretation; therefore, determining absolute radiometric ages has been a critical component of this science. In the deepest basement of the Royal Ontario Museum, a group of geochronologists, using state-of-the-art technology, try to place geological events into a chronological sequence in order to establish a framework for theories on the evolution of Earth's crust.

In 1975, the Jack Satterly Geochronology Laboratory of the Royal Ontario Museum was established by Dr. Thomas E. Krogh through a joint venture between the ROM and the Ontario Ministry of Natural Resources. Dr. Krogh and colleagues have refined a radioactive dating technique that permits the measurement of geological time with unprecedented precision and accuracy. Uranium-lead (U-Pb) dating has emerged as the most powerful tool for elucidating past geological events because it is the only radioactive decay scheme that has two parent uranium isotopes (^{238}U and ^{235}U), which serve as independent, highly accurate recorders of age that can be cross-checked.

Zircon is the mineral most often used for uranium-lead dating. When tiny crystals of zircon form, they incorporate trace amounts of the unstable isotope uranium. From

ed to episodic changes in Earth's convecting mantle that produce periodic volcanic eruptions. The Deccan Traps in India represent one of the largest outpourings of basaltic lava known and are approximately the same age as the K/T boundary clay layer. Recent stratigraphic and palaeontological studies that argue for a gradual disappearance of species over several hundred thousand years prior to the event that produced the layer of iridium-enriched clay support the volcanism theory. An extended episode of basaltic volcanism would produce huge volatile emissions and great amounts of ash in the atmosphere, leading to acid rain, a change in the pH of surface ocean water, and global atmospheric cooling—in other words, sufficient global environmental stress to precipitate a catastrophe.

Efforts to prove the impact hypothesis were impeded by the failure to locate an appropriate impact crater

Efforts to prove the impact hypothesis were impeded by the failure to locate an appropriate impact crater. Fieldwork conducted on the K/T boundary layer in Haiti revealed, through the presence of quartz grains and the chemical composition of the tektites, that such a crater would have formed on the continental crust, not the oceanic crust.

In 1990, Dr. Alan Hildebrand of the Geological Survey of Canada, and colleagues published evidence suggesting that a 180-kilometre-diameter subterranean circular structure on the Yucatán Peninsula, Mexico, was the source crater for the K/T boundary ejecta. For decades this circular anomaly was presumed to be a volcanic centre. Hildebrand and colleagues named the crater Chicxulub, a Maya name, meaning "tail of the devil," for a nearby town and for the first petroleum exploration drill hole into the structure. They homed in on this site after observing thick impact-wave deposits and a coarsening of shocked-mineral grain size at the K/T boundary in the Caribbean region, suggesting proximity to the target location. The crater, shocked quartz, a geochemical link between Haitian tektites and the target rocks—and the dating of the melted target rocks to circa 65 million years ago—convinced Hildebrand and colleagues that the Chicxulub crater was the "smoking gun."

The Alvarez theory of a single, collosal meteorite has the support of Dr. Virgil Sharpton of the Lunar and Planetary Institute in Houston, who, on the basis of a reassessment of earlier geophysical surveys, believes that the Chicxulub crater size is 300 kilometres in diameter. He estimates that an event of such magnitude would oc-

OF GEOCHRONOLOGICAL DATING

the time each uranium isotope is trapped inside a zircon crystal, it begins to decay at a constant rate to its respective daughter isotope of lead: ^{238}U decays to ^{206}Pb with a half-life of 4.5 billion years and ^{235}U decays to ^{207}Pb with a half-life of 0.7 billion years. When the ages given by the two different uranium-lead systems are the same it can be concluded that the results are accurate and that nothing disturbed the crystal since its formation. However, when different ages are determined it means that lead has been lost from the crystal, evidence of some external disturbance. An analysis of this data can usually determine when the lead was lost and therefore when the disturbance took place.

Zircon is extremely well-suited to this dating technique for a number of reasons. It is extremely stable, both physically and chemically, even under extreme conditions, and is commonly found in a wide variety of rocks formed throughout Earth's history. The minute quantities of uranium (0.01 to 0.1 per cent) it incorporates will not damage the crystal during radioactive decay, which could introduce extraneous amounts of uranium and/or loss of lead. Zircon does not incorporate lead when crystals are formed so that lead present has only resulted from the uranium isotope decay process.

Technological advances and refinements of the uranium-lead dating method developed at the ROM permit the analysis of incredibly small quantities of lead—less than one-tenth of a billionth of a gram. These advances have permitted the analysis of individual zircon crystals that are only a fraction of the size of a grain of sand.

cur approximately only once every billion years. However, not all impact theorists agree. Some argue that the havoc may have resulted from multiple impacts by meteorites that had been part of a comet stream. The impacts would have extended over a period of years. For example, it has been suggested that the smaller, 35 kilometre-diameter Manson crater in Iowa, which was reported to be about K/T boundary age, also contributed to the K/T boundary ejecta. The multiple impact theory could help to explain why palaeontologists are reporting extinctions occurring gradually rather than in one instant of time.

A very large meteorite impact probably formed the Chicxulub crater and was the source of K/T boundary ejecta

New evidence based on research from the geochronology laboratory at the Royal Ontario Museum should end much of the ongoing debate by proving that a meteorite struck the northwestern tip of the Yucatán Peninsula, forming the Chicxulub crater, and that the impact had far-reaching effects. Dr. Thomas Krogh, the ROM's curator of geochronology, with my assistance, used a radioactive dating technique that shows that rock dust blanketing North America at the end of the Cretaceous period must have come from the Chicxulub crater. The data also show that the clay layer of the K/T boundary could not have been derived from a volcanic eruption or from the Manson crater.

Our evidence was gathered by determining the ages of tiny crystals of the mineral zircon ($ZrSiO_4$) that occur in the clay layer at the K/T boundary and the ages of the rocks at the suspected meteorite-impact site. We used the uranium-lead (U-Pb) radiometric dating technique in order to obtain these results. With this technology we were able to calculate the ages of individual crystals of zircon and then characterize the precise target site.

In theory, if a large meteorite crashed into Earth's continental crust, the debris from the blast that settled out around the globe should contain zircons with ages representative of the ages of the rocks found at the target site. With that in mind we obtained U-Pb data on single shock-metamorphosed zircons from the Chicxulub crater rocks and from the K/T boundary layer in Haiti, Colorado, and Saskatchewan. The predominant crystallization age we obtained for zircons from all of these sites, located thousands of kilometres apart, was circa 545 million years.

The results are remarkable for a number of reasons. First of all, they provide a direct link between K/T ejecta from North America and the Chicxulub impact crater. The 545-million-year age for the target rocks eliminates the possibility of the Manson crater contributing to the K/T ejecta because the rocks that were impacted there are older than circa 1450 million years. Secondly, the data show that each zircon crystal experienced an isotopic resetting, or disturbance, 65 million years ago, the time of the impact. The shock-related textural features of the zircons, first reported recently by Dr. Bruce Bohor of the United States Geological Survey in Denver, are known to occur only in impact-related rocks. These textural features show a correlation between the degree of isotopic resetting and the extent of the shock-induced textural change. In other words, zircons showing extreme shock textures tend to yield U-Pb data closer to the 65-million-year age while zircons with more moderate deformation features show far less resetting and yield data closer to the 545-million-year age. Finally, the age data unequivocally show that the K/T boundary ejecta layer could not have been derived from a volcanic eruption. If this were the case, the zircons exhibiting the least amount of shock, or those showing no shock effects at all, would be 65 million years old, representing the time of eruption. The best explanation is that a very large meteorite impact formed the Chicxulub crater and was the source of K/T boundary ejecta.

While a direct cause-and-effect relationship between the dinosaur extinctions and the effects on the biosphere of a large meteorite impact at the end of the Cretaceous period is still in question, our data prove that an impact did occur and should help focus attention on the exact environmental effects of that impact. Our future work in Europe and in the southern hemisphere will hopefully shed further light on one of the most interesting and intense geological debates of all time.

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FIT FOR A

Meroe is celebrated for its splendid gold and strong matriarchy

KRZYSZTOF GRZYMSKI

QUEEN

PHOTOGRAPH COURTESY K. GRZYMSKI

The remains of the royal pyramids of Meroe are the most visible reminders of the past glory of a kingdom that once was Egypt's chief rival in Africa. Smaller than their Egyptian counterparts, the tombs are appealing because of their more human scale and elegance.

THE ROYAL PYRAMIDS OF MEROE ARE perched atop a low rock ridge, which dominates the surrounding gravelly desert plain. They are the most visible reminders of the past glory of a kingdom that once was Egypt's chief rival in Africa. The ancient city of Meroe gave its name to this Nubian civilization that flourished in the middle reaches of the Nile, in what is now Sudan. Unlike the well-known remains of Egypt, those of Meroe have rarely, if ever, attracted public attention.

The chequered political history of the region and its inaccessibility kept all but the most adventurous tourists and explorers away. Even now few people realize that there are more royal pyramids extant in Sudan than in Egypt. The Nubian pyramids of Napata (modern Karima) and Meroe (modern Begarawiya), smaller than their Egyptian counterparts, are appealing because of their more human scale and elegance.

Ancient Egypt had a potent influence on the politics and art of neighbouring societies. Until quite recently, scholars used ancient Egypt as a yardstick against which the other countries and their cultures were measured. Unfortunately, as a result of this perspective, interpretations of the non-Egyptian cultures focused on their similarities to Egyptian culture in such areas as religion, burial practices, and artistic motifs, while overlooking or judging as inferior

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distinct local artistic, social, and cultural traditions. However, in the last 20 years or so, the Egyptocentric view of Nubian civilizations has been challenged, and as a result Nubian cultures are now being studied on their own terms.

Meroitic civilization is but one of many that once flourished in the Nubian Nile valley. The kings and queens of Meroe, who reigned from approximately 300 BC to AD 350, once controlled all of the Nile Valley south of Aswan in Egypt and north of Axum in Ethiopia. They generally maintained good relations with the Ptolemaic rulers of Egypt, but when Egypt was conquered by the Romans, the Meroites boldly, if not naively, attacked the new overlords in 25 BC. The Meroitic army did defeat the Roman cohorts stationed at Syene (modern Aswan) and carried off, among other things, the statues of Augustus. In response, the new Roman prefect of Egypt, Caius Petronius, drove the Meroites out of southern Egypt, conquered large tracts of Nubia, and recovered most of the war booty. Peace was eventually negotiated at the Greek island of Samos. It was there that Augustus received Meroitic envoys in 21 BC and signed a treaty that was to last for the next three centuries. All of these events are well documented in various ancient accounts, the most important of which was written by Strabo, the famous Greek geographer.

Strabo reported that the Meroites were ruled by "a masculine sort of woman, blind in one eye," named Candace. Unfortunately, this information is not very helpful, for modern historians now know that Candace, or more properly *Kandake*, was not a name but rather a title, meaning queen or possibly queen mother. Who was the queen, who like Cleopatra before her, dared to oppose the Romans? This mystery cannot be easily solved because, even though there is a profusion of Meroitic iconographic and textual documents, the latter are not as yet decipherable. Furthermore, there were at least three kandake who ruled from the end of the 1st century BC to the beginning of the 1st century AD.

The three queens were Amanirenas, Amanishakheto, and Amanitore. Like three good fairies the queens are associated with all the best in Meroitic culture: the most beautiful temples, flourishing cities, and outstanding objects of art such as the jewellery of Amanishakheto, which is the focus of an exhibition currently on display at the Royal Ontario Museum. It is commonly assumed that Amanirenas waged war against the Romans. Stelae left from her reign are believed to describe that conflict. However, it is also possible that Amanishakheto ruled Meroe at the time of Augustus and Strabo and left stelae bearing her name. Although the last of the royal trio, Amanitore, seems to have ruled later, she can not be entirely discounted as a candidate for Strabo's Candace. She also left inscriptions, one of which has played an important role in modern attempts to decipher the Meroitic language.

The inscription, which includes the names of Queen Amanitore and King Natakamani, is on a stand for the sacred bark found in the temple of Isis at Wad Ben Naga. It is written in both Egyptian and Meroitic hieroglyphs, which enabled the great Welsh philologist, Francis Llewelyn Griffith, to identify the phonetic values of Meroitic signs. This was a major breakthrough for it allowed scholars to "read" the texts even though the meaning of most words remained unknown. Unfortunately, even now, 80 years after Griffith's work was

Below: The pyramid of Queen Amanishakheto in 1821, from F. Cailliaud, *Voyage à Méroé*, Paris, 1823-27, plate XLI. Facing page: A shield ring with ram's head of Amun is made from gold fused with glass and carnelian, and measures 5.5 cm in height.

PHOTOGRAPH COURTESY METROPOLITAN MUSEUM OF ART

THE RULERS OF MEROE GENERALLY MAINTAINED GOOD RELATIONS WITH THE PTOLEMAIC RULERS OF EGYPT, BUT WHEN EGYPT WAS CONQUERED BY THE ROMANS, THE MEROITES ATTACKED THE NEW OVERLORDS IN 25 BC

published, the language can not be interpreted, and the identity of the queen who fought the Romans can not be confirmed.

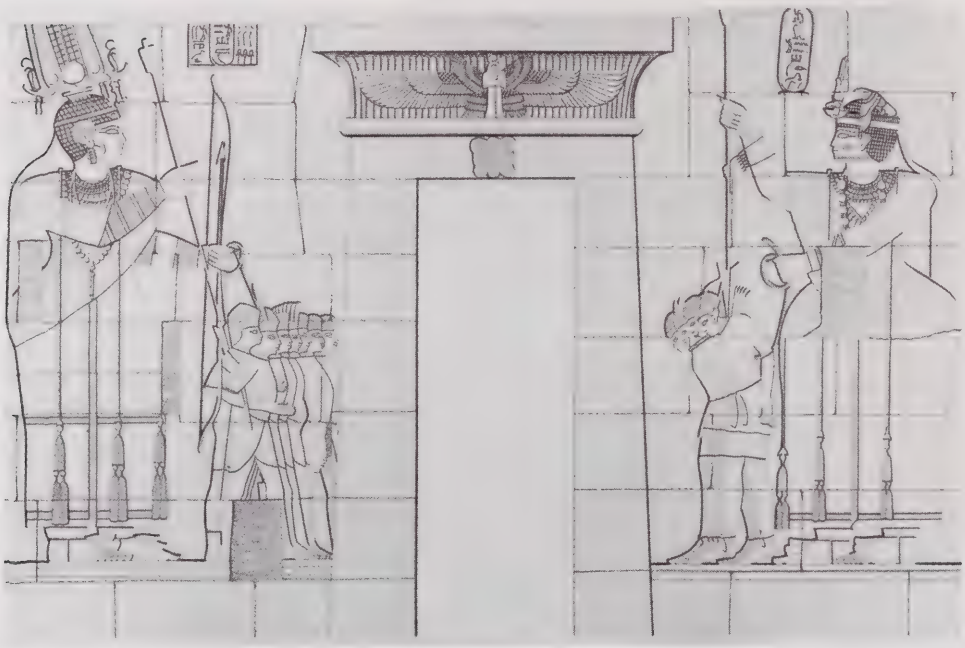
Because of the text's obscurity archaeologists next studied objects to learn what could be revealed of the historical facts. At the same time that Griffith was working on the Meroitic language, John Garstang, a British archaeologist, was making major discoveries at the royal city of Meroe. Under the threshold of a building, which may have been a temple, he found a bronze head of Augustus. Garstang speculated that this bust, considered to be one of the most important examples of early Imperial Roman art, had been looted from Aswan and never recovered by the Romans. This would confirm that a Meroitic-Roman war had taken place.

In 1922, George A. Reisner, an American archaeologist, was excavating the royal cemetery of Meroe, located in what is now called Begarawiya, about four kilometres east of the capital city. He found a beautiful silver goblet depicting Augustus in a judgement scene, which may be an allusion to the peace treaty of Samos. The vessel may have been sent to the Meroitic queen as a gift, which eventually was placed in her tomb. If that were true then the identity of the queen might be deduced from the place where the goblet was found. Unfortunately, it was not found in its original burial spot, but rather in debris close to the tombs of both Amanishakheto and Amanitore, where it was likely dropped by ancient robbers. As the tomb of Amanirenas has never been positively identified, she still can not be excluded from the list of possible recipients of the gift. And so the identity of the warring queen remains in question.

Much can be learned, however, about Meroitic religion and craftsmanship from the royal jewels found in the tomb of Queen Amanishakheto. Many of the jewellery motifs are clearly derived from Egyptian and Classical art. It is equally evident that many Egyptian deities were worshipped, such as Mut, a spouse of the god Amun who was called Amani by the Meroites. Mut and "mother" are expressed by the same Egyptian hieroglyph, and so Mut's frequent appearance on seal rings belonging to a *kandake*, i.e. queen mother, makes perfect sense. Equally important in the Meroitic pantheon was Wosi, more commonly known today as the Egyptian goddess Isis, whose cult spread throughout the Mediterranean world. Her temples stood in Rome and in Meroe, but the most important one was situated in Philae near Aswan. It was frequented by Meroitic pilgrims and remained open even in the early Christian era, when other pagan temples were either closed or converted to churches. Isis, mother of Horus and wife of Osiris, is depicted on Meroitic offering stelae, on reliefs in funerary chapels, and on Amanishakheto's seal rings and bracelets.

Local deities, whose functions and attributes are less well known or understood, are also represented on objects from Amanishakheto's tomb. For example, the head of Sebiumeker, a hunter-god, graces one of the uniquely Meroitic shield-rings. The rings are distinguished by an attached plaque, usually collar-shaped shield, which is surmounted by the head of a deity. It is not clear whether the rings were worn on fingers or, what seems more likely when compared to current Nubian jewellery, on the forehead.

Queen Amanishakheto's jewellery was discovered in 1834 by Giuseppe Ferlini, an



Below: Queen Amanishakheto is pictured victorious over her enemies in reliefs on the pylon of the chapel of Pyramid "N6," in the North Cemetery, Meroe. Reproduction from C. R. Lepsius, *Denkmaeler aus Aegypten und Aethiopien*, Berlin 1849-59 part V, sheet 40. Facing page: A seal ring portrays a ruling couple with their child, and measures 2.5 cm wide.

PHOTOGRAPH COURTESY METROPOLITAN MUSEUM OF ART

MUCH CAN BE LEARNED FROM QUEEN AMANISHAKHETO'S JEWELLERY. MANY OF THE MOTIFS ARE CLEARLY DERIVED FROM EGYPTIAN AND CLASSICAL ART, AND MANY EGYPTIAN DEITIES WERE WORSHIPPED

Below: Shield rings may have been worn on the forehead in ancient times as they are by modern Nubian women today. Facing page: A figure of a jackal with uraeus is made of gold with fused glass, and measures 2.7 cm in height.

The Gold of Meroe *is on display at the Royal Ontario Museum until 5 September. First Marathon Securities Limited is the official sponsor.*

Italian physician and amateur archaeologist. At that time, anyone with the interest, time, and money could explore ancient sites in search of treasure. Ferlini chose the royal tombs of Meroe as his targets. After securing permission from the local authorities, he hired a gang of workmen and began the systematic dismantling of the pyramids from the top down, in the hope of a great find. He succeeded when he found a hidden chamber in Amanishakheto's pyramid containing jewellery and other valuable objects. It is a miracle that any Meroitic pyramids have survived to this day because Ferlini's find inspired a local military commander, who planned to tear down the rest of the tombs in the hope of finding more treasure. Fortunately, for whatever reasons, this never happened.

Upon his return to Europe, Ferlini attempted to sell his collection but he had difficulty finding a buyer. Because the Meroitic civilization was unknown to the general public at the time, nobody would believe that such magnificent objects had been made outside Egypt. It was assumed that the objects had been forged. Finally, the Bavarian king Ludwig dared to buy half of Amanishakheto's riches. A few years later the king of Prussia, Friedrich Wilhelm IV, followed suit on the advice of the eminent Egyptologist Karl Richard Lepsius, who in 1844 actually visited Meroe and was, therefore, well aware of the sophistication of the ancient Meroites. The collections of the two kings were eventually deposited in museums in Munich and Berlin, to be reunited for the first time after the reunification of Germany in the exhibition *The Gold of Meroe.* After being displayed in four German museums, the exhibition travelled to the Metropolitan Museum of Art, New York, and to the Royal Ontario Museum.

Amanishakheto's jewels, although extraordinary in their execution, are by no means unique in the Meroitic civilization. Reisner's excavations produced many other examples of ancient Nubian jewellery, which can now be admired in museums in Boston and Khartoum. They all display the same creative blend of foreign and local traditions and beliefs—the syncretism so common among cultures of the time.

Meroitic artisans not only displayed artistic talents, they were gifted technicians. Amanishakheto's jewellery was made using a novel enamelling technique that, through heating, fused powdered glass to gold. It is a pity, however, that excavations at Meroe have not revealed any remains of the goldsmiths' workshops.

Meroe was also an ancient industrial centre, a fact archaeologists learned from the iron slag mounds spread far and wide around the site. An early British archaeologist once referred to Meroe as the Birmingham of Africa and the joint Canadian-Sudanese expedition, directed by Peter Shinnie from the University of Calgary and Ahmed A. Hakem from the University of Khartoum, unearthed several iron-smelting furnaces. If there were ever an "Iron Lady" of the ancient world, she would have been a Meroite.

The Royal Ontario Museum's collection of Meroitic objects dates back to the days when C. T. Currelly, the first director of the Royal Ontario Museum of Archaeology, showed some interest in Meroitic civilization by purchasing in Aswan many fine ceramic vessels for which the Meroites had been justly renowned. Currelly's patron, Sir Edmund Walker, also provided financial assistance to John Garstang, and was, in turn, given a selection of artifacts, including sculptures from the royal city of Meroe. More recently Peter Shinnie donated, to the ROM, pieces from the Calgary excavations.

Research conducted by the ROM since 1984 has not focused on Meroe but rather on other Nubian sites with the objective of discovering and preserving monuments. Several well-preserved structures are now accessible to tourists, although objects found within them have been transferred to Khartoum. A selection of objects was also generously awarded to the Museum, by the government of Sudan, in recognition of the institution's contribution towards the documentation of ancient Sudanese cultures. Some of these objects are on display in the Recent Research case of the Nubia Gallery.

While the Toronto collection presents a wide range of artifacts produced by ancient Nubians, including jewellery, it does not include anything made of gold. It has been suggested that Nubia was named for gold: "nbw" was the ancient Egyptian word for gold. While this can not be confirmed, what is certain is that among the ancient Nubians there were gifted artisans who created precious objects with a beauty that transcends time and place. ✿

PHOTOGRAPH BY J. ANDERSON

PHOTOGRAPH COURTESY METROPOLITAN MUSEUM OF ART

MEROITIC ARTISANS

NOT ONLY DISPLAYED ARTISTIC TALENTS, THEY WERE GIFTED TECHNICIANS.

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THE SIGMUND SAMUEL CANADIANA GALLERY

The early history of European settlement in Canada has never been more beautifully presented

SANDRA SHAUL / PHOTOGRAPHY BY BRIAN BOYLE

WITH THE OPENING OF THE NEW SIGMUND SAMUEL CANADIANA GALLERY this past February, the Museum's Canadiana collection finally has a permanent display that, in a very comprehensive and clear way, places objects in their historical and social contexts. Located on the Canadian Heritage Floor, the new gallery consolidates and improves upon the displays that were previously located in this space and in the Sigmund Samuel Canadiana Building.

The collection reflects the interests of its founder and patron, Sigmund Samuel, in its focus on Ontario, Quebec, and the Maritimes. Samuel began collecting soon after his move from Toronto to London in 1915, where he searched auction houses and galleries for historic pictures relating to the Seven Years' War in Canada. Later his collecting expanded to early and rare books describing Canadian exploration and travel; maps of North America and Canada; and oil paintings of early Canadian land and sea battles, military figures, and 19th-century progress and settlement. In 1940, Samuel donated his collection of more

Facing page: The elegant doorway to the John Beverley Robinson house, Toronto. Above: Trade silver was valued both as currency and as jewellery. Below: Early 19th-century formal English dinnerware from the Royal Porcelain Works, Worcester.

Sandra Shaul is executive editor of Rotunda *magazine*

than 5000 items to the ROM. Over the years he contributed money to build exhibition space, first in the main building and later the Sigmund Samuel Building. He continued to collect until his death in 1962, and in his will established an endowment that provides for the growth of the ROM's Canadiana collection.

Spanning the late 1600s to early 1900s, it represents the history of European settlement in Eastern Canada before the great wave of western settlement. There are four main sections in the gallery. The first, The French Tradition 1680-1820, brings together objects not only from the Canadiana collection, but also from the Museum's Ethnology and New World Archaeology collections. Many of the artifacts were discovered by the late Walter Kenyon, a ROM archaeologist who carried out extensive research on the early fur trade. Among the many items exhibited are pieces of trade silver. Their striking design made them valuable as jewellery and currency.

Donald Webster, an historian associated with the Canadiana Department since 1966 as a curator and former head, worked as an archaeologist when he excavated the Fort Senneville site in 1971. The fort, located on the west side of the island of Montreal, was built during the early 1700s Indian raid period. It began life under the French but was briefly used by the British at the time of the American Revolution. Benedict Arnold's men burned the fort in May 1776.

Facing page: A reconstructed wood-panelled room from the Bélanger farmhouse. Above: Three pieces of 19th-century Quebec Church ceremonial silver. Below: A 19th-century carved-wood trumpeting angel from Quebec.

Beautiful examples of Quebec statuary, carving, and metalwork for the Roman Catholic Church are exhibited in this section, as is a well-known panelled room from the Bélanger farmhouse, a 1.5-storey building located near St. Jean Port Joli, Quebec. Janet Holmes, curatorial assistant in the Canadiana Department, spent considerable time researching the room by looking at old photographs and speaking to relatives of the Bélangers. She discovered that there were inaccuracies in the way that the room was previously reconstructed. The current installation, which duplicates how the room might have appeared in 1820, required the lowering of the ceiling and new placements for two walls. Its rich and elaborate pine-wood panelling, of a quality more commonly found in churches, was crafted by Amable Charron, an apprentice of the renowned church carver Louis Quévillon, in primarily English Classical-Revival style.

The furniture displayed in this section is but a small selection of the finest collection of French-Canadian furniture in the country.

In the second section of the gallery, British North America 1760-1840, the impact of Britain on the shape of Canadian history is explored. Benjamin West's endearingly melodramatic painting, *The Death of Wolfe* (c.1776, the fifth of five versions), which commemorates the British victory over the French on the Plains of Abraham, provides the introduction. Room settings portray The English Colonial and Maritimes Loyalist (1784-1810) periods. The importation of British ceramics and the production of Canadian silver are described through exhibits. Although not all on display, works by almost all of Canada's early silversmiths are included in the ROM's collection of more than 500 pieces. It is the most comprehensive collection of its kind.

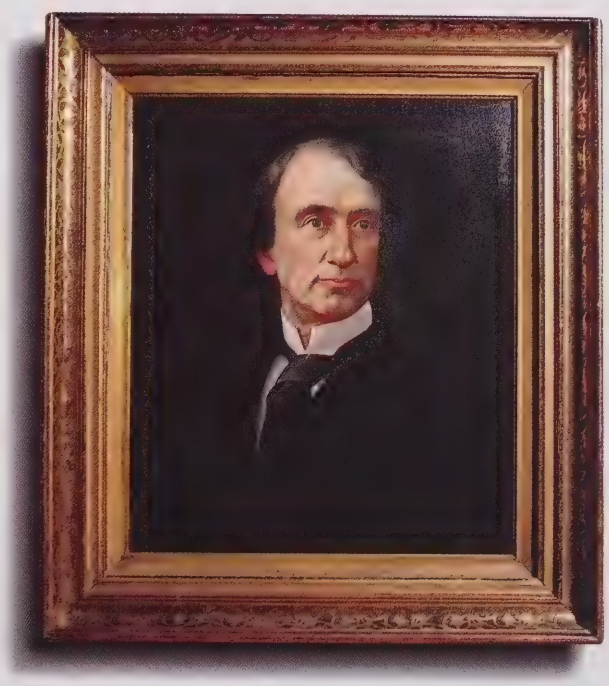
Taking Root in Upper Canada 1800-1900 is the title of the third section. Scottish, Irish, American, and German immigrants enabled the small colony of 15,000 people in 1791 to grow into a thriving province of 1.5 million by 1867. Displays on farming and lumbering illustrate how Ontario was settled and developed. As interesting as farming and lumbering may be, it's the the multi-purpose cooking gadgets and appliances that always catch my eye; their creators were undoubtedly the ancestors of the inventors of the vegematic or kitchen robot. A kitchen setting includes a cast-iron stove with a baking oven and shelves for warming. A text panel outside the room shows a woman using her stove out-of-doors because she and her familly had yet to build a proper house. The enterprising spirit of the manufacturer of the stove is charmingly evoked by a bit of relief decoration portraying an "iron horse" steam-engine train, racing across the face of the oven.

Facing page: A selection of 19th-century factory glass and silver. Above: A 19th-century kitchen features a cast-iron stove with an iron-horse relief decoration. Below: A painted portrait of Sir John A. Macdonald (1877) by Delos Clive Bell after a photograph by W. J. Topley.

The final section of the gallery is entitled Progress and Prosperity 1840-1910. It tells the story of the decades after 1850 when developments in industry and technology transformed the lives of Canadians. There are examples of factory-made clothing ceramics, toys, silver, and glassware, as well as an Empire-style parlour and a Victorian dining room and bedroom. To the untrained eye, the beauty of the glass, silver, and china, makes them difficult to distinguish from handcrafted goods.

Another highlight of this section is the doorway and entrance of the John Beverley Robinson house, which was built in 1822 and demolished in 1900. The house was the same vintage and in the same neighbourhood in Toronto as The Grange behind the Art Gallery of Ontario. (A well-known portrait of the three Robinson daughters belongs to the AGO.) After its life as a family dwelling, the house became a convent. When the convent was demolished, the doorway was preserved and later donated to the Museum.

While the four sections of the gallery give an overall sense of the history and culture of Eastern Canada, another exhibition space called A Canadian Portrait Gallery: Faces from Canada's Past serves as a complement by putting names and faces to some individuals who were part of the history and culture. In fact, although there are some very fine pieces by some of the better known artists who worked in Canada, such as Paul Kane and Cornelius Krieghoff, the paintings, photographs, prints, and silhouettes were primarily acquired because of their subjects, the technology used to produce them, and their historical value.



Members of the military, levels of government, clergy, and every class of society are shown, beginning with a portrait of Montcalm, the French commander who died on the Plains of Abraham. It is based on a print produced after 1750. In spite of the

hostility between the British and the French, a portrait of King George IV was painted in Quebec by Joseph Légaré and placed in a wonderful carved frame produced by a Quebec artisan.

William Jarvis (1756-1817), portrayed with his young son Samuel in Queen's Rangers uniforms, was a Loyalist from Connecticut who moved to England after the American War of Independence. Governor John Graves Simcoe convinced Jarvis to move to Upper Canada in 1792 where he was appointed the first Secretary. Young Samuel died just after his family's arrival in Canada. However, a second son, who was born in Canada and also named Samuel, developed the family property and Toronto's Jarvis Street. The portrait was painted in London in 1791 by James Earl, an American artist.

There are also portraits of merchants and their wives, including works by two fine early Canadian artists, François Malepart de Beaucourt (1740-1794) and Jean-Baptiste Roy-Audy. Through the group of paintings, one can see the transition from simple compositions produced by itinerant artists to more formal portraits. Stylistically, there is a transition from Neoclassical to Romantic.

Facing page: A painted portrait of William Jarvis and his son by James Earl. Above: A portrait of Jane Ewart Mowat painted in the Romantic style by Théophile Hamel. Below: A portrait of Marie-Émélie-Catherine Saint Omer, Mme Lachapelle painted in the Neoclassical style by Jean-Baptiste Roy-Audy.

Those who could not afford painted portraits purchased silhouettes and drawings. However, the advent of the daguerreotype, and then photography, made high quality portraits available to all. Whereas the first photographic portraits are composed much like paintings, photography also influenced the composition of painted portraits. In the case of a portrait of Sir John A. Macdonald painted from a photograph, the great statesman's stiff and ghastly appearance reflects the sobriety of the lengthy poses required by early photographic sessions.

There is one more space in the Sigmund Samuel Canadiana Gallery and it is dedicated to temporary exhibitions. *First Impressions: Prints of Early Canada from the Sigmund Samuel Collection* includes a selection from the rare maps, books, and prints that were collected and donated to the Museum by Sigmund Samuel. (This exhibition closes 28 August 1994.)

The Sigmund Samuel Canadiana Gallery provides a dynamic and easy-to-grasp overview of the first centuries of European settlement in Canada. For those who enjoy learning about Canadian history through museums, the Canadiana gallery provides a broader context for regional museums, such as Black Creek Pioneer Village or Upper Canada Village.

With the opening of the Sigmund Samuel Canadiana Gallery and the Gallery of Indigenous Peoples the Canadian Heritage Floor of the Royal Ontario Museum was completed. These two galleries join the Ontario Archaeology Gallery; the Heritage Gallery of Canada's Peoples, which displays exhibitions organized in cooperation with the Multicultural Historical Society of Ontario; and the Roloff Beny Gallery, which displays exhibitions organized by the Institute of Contemporary Culture. Together they paint a picture of the founding peoples of this country and of our contemporary, multicultural society. ❦

CASE CLOSED:

PERHAPS, LIKE ME, YOU ARE SOMETIMES A RELUCTANT TRAVELLER IN A SOCIETY that is rushing forward to embrace an ever-receding future. It seems that most of our daily efforts are concerned with new beginnings. In the academic world these take the form of research proposals, grant submissions, licence requests, and abstracts of future papers, to mention only a few, and I often wonder where all the beginnings end. That's what caused me to reflect on a major "ending" in my life, the completion of a research project that began more than 19 years ago.

At a domestic campsite, Early Palaeo-Indians prepare and sew skins while others resharpen tools.

ILLUSTRATION BY IVAN KOCSIS

That 19-year journey began in 1975 when I discovered an important archaeological site near the city of Collingwood in the southern Georgian Bay region of Ontario. Actually, the work leading to that discovery began several years earlier as part of a program (still ongoing) to find sites that had been occupied by the first peoples to live in what is now Ontario, at the time of glacial retreat during the final phases of the Ice Age. Roughly 12,000 years later, most of what we knew about these Ice Age colonizers, called Early Palaeo-Indians, had to be inferred from sites in other regions, such as the southwestern United States, the Plains, and northeastern North America generally. Because of the great distances and environmental contrasts 12,000 years ago between Ontario and these regions, any attempts to reconstruct the life ways of Palaeo-Indian peoples in Ontario were severely limited, and perhaps bound to be inaccurate. We needed local information, not extrapolations based on the prehistoric record of related peoples in other regions.

Considering how little was known in the early 1970s about Early Palaeo-Indians in Ontario, the site I discovered near Collingwood was full of promise. Named Fisher after the landowners at the time, this former Early Palaeo-Indian campsite (or perhaps several campsites) was nearly invisible. In fact the Fishers, who had spent a lifetime farming the land, were not even aware of its existence. This is perhaps not too surprising since all that had been preserved were stone tool fragments and the bits and pieces produced by tool manufacture and resharpening, artifacts that are difficult to see from a moving tractor and, in any case, may only be recognizable by someone trained to identify them. These artifacts, few much larger than pocket change, were strewn about in small clusters across 22 hectares of cultivated fields, pastures, and fence rows at the back of the farm, far from any river or modern lake. Hidden in a pastoral landscape in a distant corner of the 20th century, the site was truly "remarkable for its unremarkableness."

For several years this bucolic setting was the focus of intense fieldwork.

Peter Storck is a curator in the New World Archaeology Department, Royal Ontario Museum

The Fisher File

A ROM archaeologist uncovers new evidence about human occupation in Ice Age Ontario

Peter Storck

During the all-too-short periods available for excavations, archaeologists, other scholars, and many students eagerly shed the concerns of their city lives to gather information about another culture from an earlier time and a different landscape. With funding from the federal government and the ROM, I excavated at the Fisher site in 1976, 1978, and 1980. My colleagues on the project included scholars in the fields of Pleistocene and Palaeozoic geology and palaeobotany, as well as specialists in various aspects of archaeological research.

You might well ask why I am writing in *Rotunda* at this time about a field project that ended 14 years ago. Part of the answer to that question has to do with getting swept up in the demand for new beginnings and the need to publish regularly on smaller pieces of one's work. The Fisher report, being a much larger and more complex project, simply had to be fitted into the eddies of a larger scholarly life. Then too, there was the problem of consulting with, encouraging, and editing the work of eight other authors who did not always agree with me that this project—and my schedule—was the most important thing in their lives. Thirdly, during the time it took to produce the

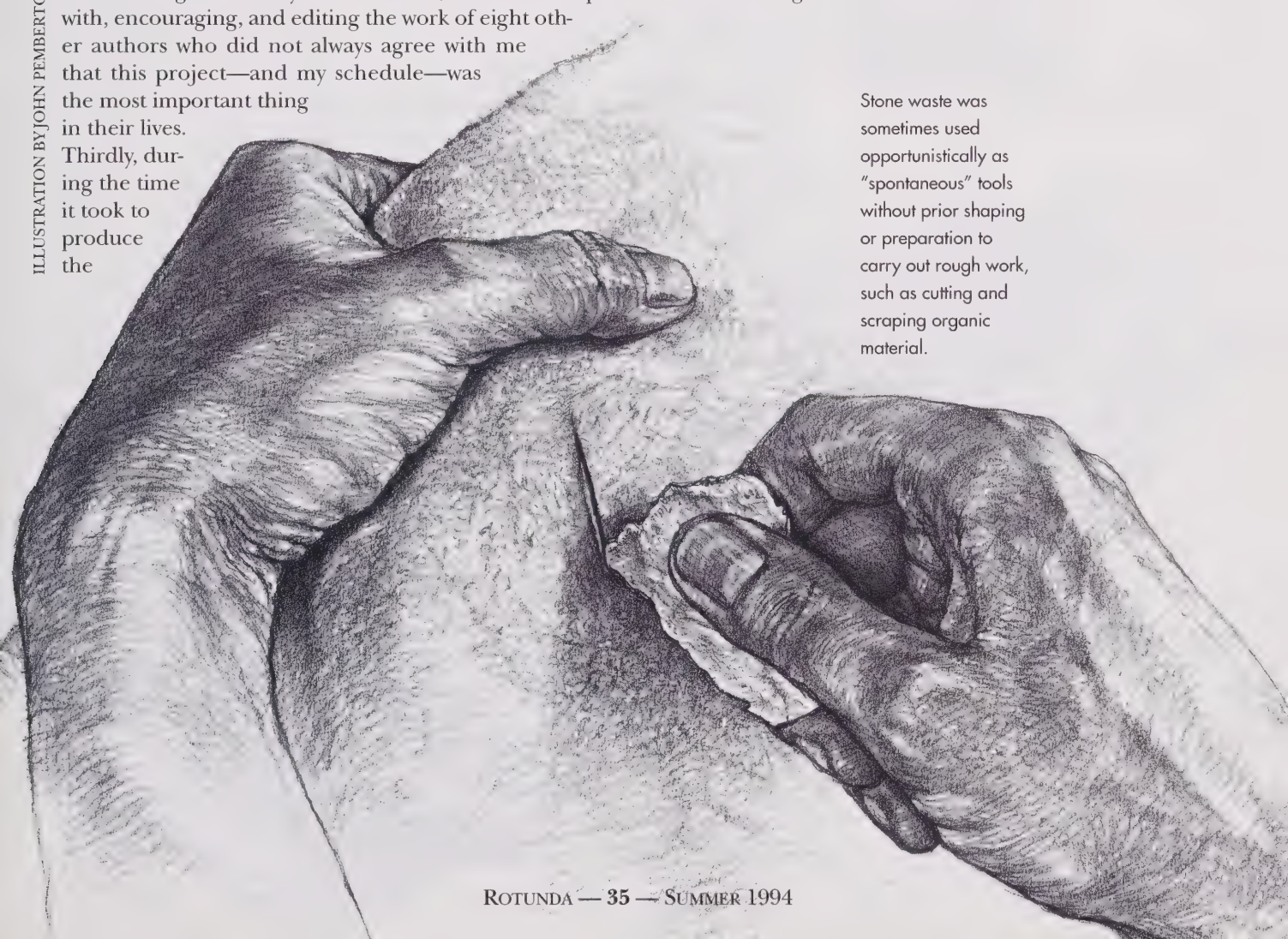


ILLUSTRATION BY JOHN PEMBERTON

Stone waste was sometimes used opportunistically as "spontaneous" tools without prior shaping or preparation to carry out rough work, such as cutting and scraping organic material.

manuscript, a three-volume report, I shifted from manual typewriter to word processor and from main-frame computer—first using punch cards and, later, magnetic tape—to personal computer (requiring the transfer of data from magnetic tape to floppy disc). What the inventors and promoters of this technological cascade of new beginnings fail to tell you is that the transition from old to new is not always smooth and without cost (i.e. time).

The fields on which the Fisher site is located were not always so anonymous and isolated

Furthermore, because of the erratic growth of science, it is often necessary, particularly on a long-term project, to revise earlier writing and to re-analyze the original data. The slow process of producing a monograph or book-length report of a multi-year project involving several authors and scholarly disciplines requires persistence, a strong commitment, stable institutional support, continuing access to a research collection, and time. This may explain, in part, why academics often choose to remain at the same institution for 20 years or longer, an unimaginable length of time to stay at the same place, let alone in the same profession, in the view of many people in other walks of life. Now, having completed a complex and long-term research project, I can take time to reflect on what was learned from the Fisher site.

Although now nearly indistinguishable from thousands of other cultivated fields in rural Ontario, the fields on which the Fisher site is located were not always so anonymous and isolated. Geological studies conducted during excavation show that the low hill where the prehistoric occupation occurred once edged the shallows of a large ice-fronted lake that overflowed Georgian Bay, merged with modern Lake Simcoe, and extended in long embayments southward almost to Toronto.

A pollen core from the former lake bottom indicates that between approximately 10,400 and 11,500 years ago the glacial lake shoreline reached to within one or two metres of the lowest occupied portion of the Fisher site. The fact that this portion of the site was in close proximity to the former shoreline, and did not extend below it, is strong indirect evidence that the Early Palaeo-Indian occupation was contemporaneous with the lake sometime during this period. In fact, other occupied areas of the Fisher site are adjacent to a higher and earlier shoreline of the same glacial lake, suggesting that the Early Palaeo-Indian occupation may have taken place during falling lake levels. Until recently, this geological and palaeoecological data was the best evidence available for the

Tool makers would chip blocks of chert to produce thin flakes suitable for shaping into tools.

ILLUSTRATION BY JOHN PEMBERTON

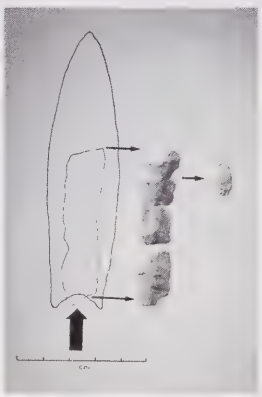
age of at least some Early Palaeo-Indian peoples in Ontario (several groups or cultures are recognized, only one of which is represented at the Fisher site, the so-called Parkhill complex).

In 1987, at another site on the margin of the same glacial lake as the Fisher site, I obtained more indirect evidence for dating the Early Palaeo-Indian occupation in Ontario. At the Udora site, southeast of Lake Simcoe, I recovered from a former firepit a small burnt bone (not much larger than a kidney bean) from the foot of an Arctic fox. The presence of this animal, perhaps trapped for its fur, indicates that Palaeo-Indian peoples in Ontario lived in an open environment. Today the Arctic fox lives in the tundra and, to a lesser extent, along the margins of the boreal forest in parkland habitats. During the late Ice Age, open environments of this type—the so-called spruce parkland—are believed to date prior to 10,400-10,500 years ago. Thus, the evidence from the Arctic fox bone at the Udora site is consistent with the geological and palaeobotanical evidence at Fisher, both indicating that the Early Palaeo-Indian occupation of Ontario occurred prior to 10,400 years ago.

The artifacts from the Fisher site tell us a good deal about Early Palaeo-Indian techniques for making stone tools. This is particularly true of the spear points, which required skills in manufacture that were seldom matched—let alone surpassed—by other peoples in the North American archaeological record, at any time. Perhaps the most interesting aspect about point manufacture at Fisher, which can be reconstructed in considerable detail because of the large number (156) of complete points and point fragments (one of the largest samples available in North America), is the step-by-step similarity with manufacturing sequences used by peoples as far away as Colorado and Texas. Other types of artifacts in the Fisher tool kit have also been found at Palaeo-Indian sites throughout North America. One of the more important of these is a miniature point (less than two centimetres long) made on a small piece of waste material (called a channel flake) that had been removed during the basal thinning of a full-sized point. Any other piece of stone would presumably have served just as well for a miniature point, yet the channel flake was selected. The channel flake establishes a direct link with the the full-sized point, or with the extremely difficult thinning process itself, or with behaviour associated with the use of the full-sized point. Clearly this association had symbolic importance that transcended the artifacts themselves.

That such linked artifacts are found on sites from the the Rocky Mountain states to the eastern seaboard indicates that Early Palaeo-Indian peoples across North America shared this symbolism. For this reason, and because of strong technological similarities in the sequence of point manufacture and shared concepts of what constitutes the essential tool kit, I have argued that Early Palaeo-Indian culture was carried throughout North America by the movements of colonizing peoples. Other archaeologists, who believe that the New World was colonized prior to the arrival of Early Palaeo-Indians, propose that the latter culture spread indirectly by the transmission of ideas (and, inevitably, reinterpreted ideas) from one population to the next. However, I find it difficult to conceive of a complex set of ideas, governing the expression of a large area of material culture (and perhaps how it was used as well), being transmitted prehistorically over great distances by word of mouth, and by people of one cultural tradition to another, without more substantial evidence of distortion and change. Viewed in this light, the artifacts from the Fisher site, located in a small corner of a province in the middle of Canada, have important bearing on an issue of broad interest, and indirectly on the antiquity of human presence in the New World.

The diffuse scatter of broken tool fragments and the debris of tool manufacture and re-sharpening also tell us something about the way Palaeo-Indian peoples used the site and organized their work. To some extent, these stone artifacts even tell us what they used their tools for, despite the fact no animal bones were preserved. This information comes from very careful mapping of



Above:
A miniature spear point was made from a small piece of waste material, called a channel flake, that had been removed during the basal thinning of a full-sized point. Below: The diagram indicates where the channel flake was removed from the larger piece.

PHOTOGRAPHY BY BILL ROBERTSON

the distribution of the artifacts across the site, clustered in 19 discrete areas, and a statistical comparison of the material in those areas. It also comes from the painstaking analysis, through a high-power microscope, of the edges of the tools for evidence of damage caused by the materials that the tools were used to cut and shape. This damage, in the form of nicks, scratches, and polish, is often unique for a particular substance (such as wood, bone, antler, skins, etc.) or for a group of species (such as soft woods as opposed to hard woods). It might even enable us to attribute artifacts to specific individuals, based on the damage caused by their respective strengths in using the tools. The study of tool damage, called use-wear analysis, is relatively new in archaeological science and has seldom been applied as extensively in Palaeo-Indian studies as in the report on the Fisher site. Furthermore, the particular approach used was only recently developed, and, because of its potential for providing new kinds of information, may propel use-wear analysis into an entirely new dimension as a source of information about the past.

Through use-wear analysis the stone artifacts may even indicate the materials that they cut and shaped

Study of the distribution of tool fragments and stone debris across the site and their use-wear damage provides an intriguing glimpse into aspects of Early Palaeo-Indian life that, at first glance, one might not expect to find in bits of stone. The scatter of material shows that Early Palaeo-Indian peoples organized their work in such a way that different kinds of activities were conducted at different places. For example, rough work with stone during the early stages of tool manufacture was separated from more advanced stages of work and tool re-sharpening. The areas where rough work occurred were also places where a considerable amount of cutting and scraping of organic materials took place, using the stone waste opportunistically as "spontaneous" tools without prior shaping or preparation. In contrast, other areas were locations where tools were finished (such as spear points) and a variety of other activities conducted involving a wide range of tools, many of which were probably associated with domestic work. These two types of work areas are found across the site and are sometimes paired suggesting that the different types of work areas were contemporaneous and part of the same occupation, being used for complementary activities.

Early Palaeo-Indians prepare stone for the shaping of tools

ILLUSTRATION BY IVAN KOCSIS

It is unlikely, however, that all of the paired areas, and the other lesser known areas of the site, were occupied at once because for hunter-gatherers this would imply an unusually large aggregation of people. While evidence for temporary population aggregations has been documented at at least one site in the northeast, there is no comparable evidence for this at the Fisher site. Lacking this information, it is only possible to infer that Fisher was probably occupied several times, perhaps yearly at a particular season, by the same band or related bands with shared cultural patterns of behaviour. If so, this repeated use of the site would imply that some Early Palaeo-Indians were not as "free-wandering" as has often been assumed.

This hypothesis is supported by another line of evidence concerning the source of the stone used to make tools. The particular cultural group of Early Palaeo-Indians that occupied the Fisher site preferred a white form of chert, a glass-like substance, for making tools. Bits and pieces from resharpening and tool discard were left on sites throughout southern Ontario over an area of some 30,000 square kilometres. Since archaeologists did not know the source of this stone, I invited Dr. Peter von Bitter, a geologist and colleague from the ROM, to conduct a systematic search for the material. After two years of re-examining the bedrock geology of a large area, von Bitter traced the chert to a relatively obscure formation of limestone (obscure because it had previously been mapped with another formation) in the Blue Mountains, roughly 25 kilometres west of the Fisher site. The presence of this chert at sites in extreme southwestern Ontario, and in the Lake Simcoe region and

farther east, suggests that Palaeo-Indian peoples travelled periodically between the stone source and other regions of the province. To my knowledge this is some of the strongest evidence in North America that at least some Early Palaeo-Indian peoples lived within ranges or territories, not unlike those documented several hundred generations later among historically known Native peoples, their distant descendants.

Tool fragments from the Fisher site also tell us something about Early Palaeo-Indian subsistence. Perhaps the most unexpected information to come from the use-wear analysis is the suggestion that fishing may have been an important activity. Indeed, fishing may have been one of the more important reasons why the people at Fisher chose to camp on the edge of a glacial lake. This was an unexpected discovery because most Palaeo-Indian researchers, myself included, have been preoccupied with finding evidence about land mammal hunting.

The blame for this preoccupation can be traced to the tryannical effect on all subsequent thinking of the first discoveries of animal bones in association with Palaeo-Indian artifacts. In the late 1920s and early 1930s, Early Palaeo-Indian artifacts were found in association with extinct bison and, later, mammoth. Although this established for the first time the considerable antiquity of humans in the New World, it also created the image that Early Palaeo-Indians were big game hunters. This image was later transformed into an explanation of how Early Palaeo-Indians had been able to colonize the continent so rapidly. It was argued that these people had been freed from the need to adapt from one ecological zone to the next

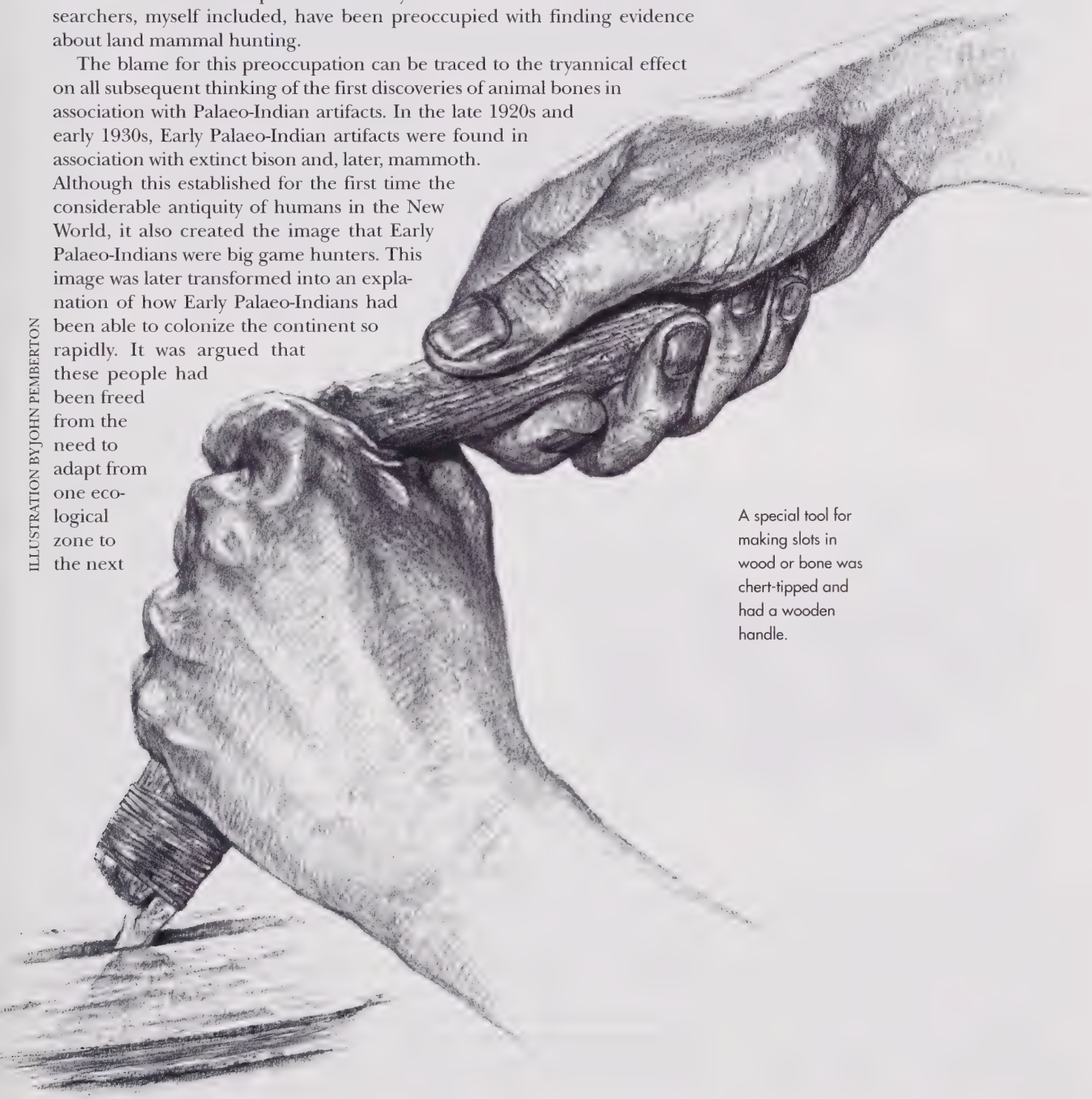


ILLUSTRATION BY JOHN PEMBERTON

A special tool for making slots in wood or bone was chert-tipped and had a wooden handle.

The Fisher site provides a new beginning in the attempt to understand human origins in the New World

because of their focus on big game—bison and mammoth in the west and mastodont and caribou in the northeast. While there is probably some element of truth to this theory—large mammal hunting was undeniably important and I have found evidence for caribou hunting in Ontario—archaeologists have not been as attentive as they should have been in investigating other aspects of Early Palaeo-Indian subsistence. Thus, my surprise at what might seem an obvious activity on the edge of a lake: fishing.

To my knowledge, Palaeo-Indian use of fish has been documented at only one site in eastern North America, located in Pennsylvania, where actual fish bones were recovered. Unfortunately, that discovery has not received much attention in archaeological debate about subsistence. The possibility that fishing may have been important at the Fisher site—a fortuitous but curious conjunction of the name fish—causes me to think of the site, and Early Palaeo-Indian land-use, entirely differently and in ways that may be helpful in finding new sites for investigation. Now, instead of attempting to look at the fossil (Late Pleistocene) landscape from the imagined perspective of an Early Palaeo-Indian big game hunter, I will also be viewing the landscape through the eyes of a person looking for opportunities to fish.

The major conclusions of the newly completed Fisher site report bring a long research project to a close and constitute the ending I spoke of earlier. Most endings in life, of course, are not sudden events nor are they truly final. This is certainly the case with the Fisher report. Although the data has been crystallized into ideas and expressed in words, much work remains before the manuscript will appear in book form. The creative process has not ended but simply shifted into another phase, that demanded by peer review and production design.

The Fisher site indicates that not all Palaeo-Indians hunted big game; they also caught fish for food.

In addition, and perhaps far more importantly, the knowledge that the Fisher site provides about Early Palaeo-Indian hunter-gatherers in Ontario, as well as the questions left unanswered or newly raised by the site, gives us a new beginning in the attempt to understand human origins in the New World. The Fisher site tells us about a pioneering people who entered a new land at the end of the Ice Age some 11,000 years ago; a land recently emerged from the receding glacial ice and undergoing rapid ecological changes, including widespread animal extinctions that were to claim the mammoth and mastodont and a large number of other species. This situation was not, however, unique to Ontario. It existed elsewhere in Palaeo-Indian and human experience generally; in New England and the Canadian Maritimes, in South America (at roughly the same latitude in the southern hemisphere as Ontario in the northern), and in northern Europe and central Asia. There, and at other places in different times, hunter-gatherers with comparable technologies faced similar problems, which they attempted to solve by using the accumulated wisdom preserved in their cultural heritage and through their sheer inventiveness.

ILLUSTRATION BY IVAN KOCSIS

We need to know more about these human experiences—how they were similar and how different—because they tell us about humankind's reactions to new challenges. Our challenges, as individuals and members of a multicultural society and a world community, are different from those of our prehistoric ancestors. But an ever-growing understanding of our collective past—an understanding that began to develop several centuries ago and must continue to grow into the 21st century—is vitally important for creating mental tools for our survival in a world that, while destined to become a global community, is also ever more conscious, and potentially critical, of our differences. ❦

A delightful terracotta design is set into a semi-circular frame over a door, surrounded by a background of sharp brick chips.

PHOTOGRAPH BY BRIAN BOYLE

Earthy Delights: Terracotta in Toronto

ANGELS, DRAGONS, SCROLLS, GARlands, classical mouldings—they flaunt their charms down the leafy length of Madison Avenue in Toronto's Annex neighbourhood. The houses are capacious late-19th century essays in hospitality, but their decorations are not, as you might expect, stone carvings. They are made from one of the homeliest, least prepossessing of materials—terracotta, or cooked earth.

Throughout the Annex and other older Toronto neighbourhoods, *fin-de-siècle* builders softened their complex and potentially dour houses with terracotta plaques, tiles, and mouldings. They varied massive surfaces with floral friezes, they punctuated drainpipes and keystones with grotesque or witty signature pieces, they separated stories with classical Greek egg-and-dart or bead-and-reel mouldings. Made from combinations of local or imported clays, the material was pressed into moulds and then fired at much hotter temperatures than those required for bricks. Voilà—poor man's stonecarving that could be reproduced as often as desired.

Although 19th-century England ultimately provided its best home, architectural terracotta dates back to the ancient Persians and Assyrians. The ancient Greeks made decorative terracotta tiles as well as antefixes (roofline ornaments) in the shapes of heads, figures, and palmettes; the Romans devised terracotta drainpipes that metamorphosed into water-spewing beasts.

In England, the material enjoyed fits and starts of popularity: after the virtual death of the craft in the Middle Ages, Henry VIII imported Italian artisans to create terracotta adornments for Hampton Court, and Jacobean builders sometimes covered entire façades in terracotta. Christopher Wren briefly lent it his prestige, and there were a few relatively short-lived terracotta factories built in the 18th century. But it was the Victorians who thoroughly domesticated terracotta.

The rapid growth of the industrial cities in the mid-19th century meant that a decorative form that was cheap, durable, and infinitely reproducible was particularly desirable. In addition, both of the great Victorian revival styles—Gothic and Romanesque—depended on sculpted flora and fauna: terracotta moulds could produce gargoyles and rosettes by the gross. Finally and decisively, the enormously influential critic John Ruskin approved

of terracotta. Committed as he was to an architectural "truth in advertising," Ruskin disliked cast iron as a substitute for carving, but terracotta was different. Unlike stone or brick veneers which "pretended" to be structural, it gave itself no airs whatsoever: it had an ancient lineage, was of the earth, and strictly intended for visual pleasure.

As in so many things, when Britain approved, Victorian Toronto nodded too. Terracotta use in the city falls into two main periods. The first, the so-called "red decade" (1884-1894) and the subject of this article, produced mostly decorative architectural pieces. The reddish colour came from the iron in the shales and clays, and most of this terracotta was produced by Ontario firms. The most notable was Rathbun's of Deseronto, but firms in Campbellville, Beamsville, Brampton, Milton, and Toronto also advertised decorative terracotta. (In the "white decade," which lasted from 1909-1919, a thin white glaze covered the terracotta surface. For more information about both decades, see *Terra Cotta: Artful Deceivers*, an Architectural Conservancy of Ontario publication.)

Unglazed terracotta panels and mouldings can be found throughout turn-of-the-century Toronto, on the "flatiron" Gooderham Building at 49 Wellington Street, for example, or in the late-Victorian streets of Parkdale. But the best place to see a concentration of the city's decorative terracotta is in the Annex, and the best street in the Annex for aficionados of the material is Madison Avenue. If there is a heaven for terracotta, it probably looks very much like Madison Avenue.

When this area was annexed to the city in 1887 it precipitated a building boom, and a remarkable number of "Annex houses" were built either in or very close to 1890. The quintessential Annex house is a complicated, round-arched structure that combines the monumentality of the Romanesque Revival with the ornamental flash and busyness of the Queen Anne style. As a two-block walk on Madison illustrates, versatile terracotta tempered the monumentality and greatly enriched the ornamentation.

At 12-14 Madison, a demure little plaque on the side of the house is composed of terracotta tiles decorated with stars and flowers, edged with egg-and-dart moulding. The same moulding rims the four round arches of the double house and ties it to the design above, a basket-weave pattern of deeply convex bricks.

The terracotta renaissance, it should be noted, took place at a time when brickmakers were effecting a variety of changes on their basic building block. Brickyards produced novelty bricks of all sorts and crushed brick, the pointed ends of bricks, and mini-bricks were used decoratively, often in combination with terracotta tiles or mouldings. The *pièce-de-résistance* of novelty bricks-cum-terracotta is 17-19 Madison, where the area around the window and door arches is a basket-weave pattern, almost Moorish in its highly textured richness: little terracotta medallions are set in the interstices between rounded bricks (each one of which is trimmed with double rows of little balls).

Although terracotta is capable of stunning effects such as this, it almost always suffers from comparison with its noble cousin, stonecarving. Walk up close to the stone portal at 18 Madison, with its carved dragon at the centre of the keystone, and admire the sugar-cube graininess of the grey-pink sandstone and the way the carved leaves emerge tentatively and naturalistically from the pillars. Even terracotta partisans must admit that the hard, orange smoothness and regularity of the terracotta panel nearby is disappointing: the humbler material works best as the sole accent on a brick house and not when forced into close conjunction with carving.

If terracotta designers felt intimidated by stonecarvers, they hid it well, brazenly copying their traditional images. Next door to the stone dragon, at 20 Madison, there are two very unthreatening terracotta ones, on a panel underneath the little gingerbread wooden balcony. Two high-relief angels' or children's faces perch in the corners above the door at 24 Madison.

When the demand for terracotta was at its height, in the last decade of the 19th century, brickyards employed several designers to produce custom pieces. One client who wanted his residence individualized was George Crane, the principal of the Lansdowne School. His 1890 house, at 49 Madison, brandishes its schoolmasterly connection with a large terracotta plaque featuring scroll and plume.

Across the street, 62 Madison has a broad frieze of alternately drooping and proudly erect flowers across the front of the house. More wittily, the drainspouts on the big, ambitious house at 61-63 Madison end with a flowing terracotta design; at the top of the spout, there's a triumphal flourish of terracotta leaves. Finally, 69-71 Madison is unrivalled for its chaste, ingenious use of geometric motifs, including a double helping of string courses, both egg-and-dart and the less common bead-and-reel.

As should be clear by now, Madison Avenue is outstanding as a terracotta sourcebook, but once your eyes are attuned, all kinds of happy surprises await you. Tranby Avenue, in Yorkville, for example, has a quintet of double Bay-and-Gable houses (33-35, 37-39, 43-45, 47-49, 51-53) trimly banded by a terracotta rope moulding as well as single and double egg-and-dart mouldings. Around the corner, at 117 Bedford, there's a delightful, very two-dimensional dragon set into a tympanum over a window, surrounded by a suitably ferocious background of sharp brick chips. Terracotta flora, fauna, and geometry are all around us—earthy, appealing examples of craftsmanship in downtown Toronto.

KATHERINE ASHENBURG
Katherine Ashenburg is Art and Books editor of the Globe and Mail

Da Vinci, Lake Erie, Homeric Art, and More

LEONARDO DA VINCI WAS A GENIUS IF anybody was. Or so most of us have been brought up to believe. This perception, however, was largely a creation, not of his own time, but of the 18th century (when, significantly, the word *genius* was first used in the modern sense—in Fielding's novel *Tom Jones*).

On the one hand, it's true that many of the few biographical facts we have about Leonardo come from Giorgio Vasari's account in Lives of the *Most Eminent Painters, Sculptors, and Architects* (1568). It's precisely for that reason that many of them aren't reliable, as Vasari was interested in collecting anecdotes about dead artists to illustrate moral points. On the other hand, Leonardo's sheer multiplicity of talents, which is really what we mean when we call him a genius, didn't become widely known until the 1880s, when some of his surviving notebooks were published in facsimile for the first time.

Only then did the world at large become aware of the full extent to which he was a scientist and engineer as well as an artist—in short, a humanist, to whom nothing human was unworthy of study. Curiously, the humanists of the Renaissance had little knowledge of or interest in him, and another 200 years or so would pass before he was discovered, so to speak. All this comes from a fascinating and easy-to-recommend book, **Inventing Leonardo**, by the American art historian A. Richard Turner (Random House Canada, $36), which is a study not only of Leonardo himself but also of the history of his reputation.

During his own life, Leonardo was most often compared with Apelles, a painter of ancient Greece known for his dark palette. By the time Vasari was gathering information, the great man had been dead 50 years and *The Last Supper* had deteriorated to the extent of being "a mere spot on the wall" of the refectory at the Church of Santa Maria delle Grazie in Milan. As Turner writes, the reason Vasari was able to invent a Leonardo for his own purposes "lay in the chaotic state of knowledge about him, even shortly after his death." But the need to *re*invent him time and again through the centuries had other causes, including the spread of printing and, with it, the widespread availability of engravings.

One of the earliest and perhaps most spectacular signs of a revival was a somewhat spurious work, first published in Italian in 1651, known in English as *Treatise on Painting of Leonardo da Vinci, Newly Brought to Light, with the Life of the Author Written by Raffaelle du Fresne.* Turner calls it "perhaps the all-time best-seller on art, with 62 editions, 11 in five languages alone before the end of the 18th century"—around the time when, "through the efforts of various artists and scholars, Leonardo went public. No longer merely the theoretician and draftsman of grotesque heads, Leonardo was now revealed as a man of wider-ranging interests, an anticipatory scientific thinker, his renovated *Last Supper* the [key] painting of the academic tradition. At last there was a shared sense of his work and its significance."

His champions spoke and wrote many different languages. In England, in his lectures at the Royal Academy, Sir Joshua Reynolds played down Leonardo's importance, while in Germany Goethe was doing just the opposite. But the heart of the discussion was in France. The emperor was sentimental about Renaissance Milan, seeing it as the kind of magnet for culture that his own beloved Paris had become. With Bonaparte's favourite neo-classical painters as brokers of change, Leonardo was "reborn as a creature of Napoleonic cultural politics." The core of his work lay at the heart of the Louvre collection when the museum was opened in the 1780s.

The Victorians saw Leonardo differently, not as an imperial figure but as a romantic, even a morbid one. On this there was now accord in Britain and France. "During the second part of the 19th century," Turner writes, "Leonardo probably gave rise to more historical and critical literature than any other historical figure." Dante Gabriel Rossetti, seeing Leonardo "as a master of the occult," wrote a famous poem about him, as Wordsworth had done earlier. By the time Baudelaire followed suit, modernism was just round the corner and people were adapting Leonardo to new contexts, as when Freud took an interest in the artist's homosexuality and Marcel Duchamp painted a *Mona Lisa* with a moustache and goatee.

In our own time, the temptation has been not only to marvel at Leonardo's many facets but also to see them, by example, as a rebellion against the inexorable progress of ever more narrow specialization. In this and other ways, too, *Inventing Leonardo* says much about society's changing expectations of art, artists, and polymaths.

SOME OTHER BOOKS OF SPECIAL INTEREST to Rotunda readers:

• Many will have read *A Trip Around Lake Erie,* in which the Cana-

dian poet David McFadden circumnavigated the lake that Ontario shares with four American states, recording, in semi-fictional form, his impressions of the people and theirs of him. **Living with the Lake Erie Shore** by Charles H. Carter, William J. Neal, William S. Haras, and Orrin H. Pilkey, Jr. (Duke University Press, US$41.95 cloth, US$16.95 paper) is sort of the environmental equivalent. The authors explore and map every inch of the lake's shoreline, islands, bays and spits, evaluating the damage done by erosion since the 1970s and generally trying to reconcile, in broad terms yet in close detail, how so many millions of people can co-exist with such a delicate (yet surprisingly resilient) resource. Plenty of maps and lots of scarce information here.

• The subtitle of Charlotte Gere and Michael Whiteway's lovely and useful book **Nineteenth-Century Design** (Little, Brown Canada, $100) is "From Pugin to Mackintosh." That is, from Augustus Pugin (1812-1852), one of the high priests of the Gothic Revival style in architecture and decoration (and in furniture, including pieces he made for Windsor Castle), to Charles Rennie Mackintosh (1868-1928), leader of the Glasgow School and one of the most influential figures in the spread of art nouveau. That is to say, this is not only a survey of how taste evolved but the story of the rise of the designer as a separate profession, distinct from both the artist and the artisan. Where possible, the two authors have tried to stake out the path of the 19th-century British avant-garde "by relating surviving furniture, interiors and decorative art to drawings, published and patented or registered designs, exhibition catalogues, jury reports and criticism, and recorded commissions." The care that has gone into the editorial and particularly the physical aspects of this book are fully what the subject deserves.

• **The Encyclopedia of the Peoples of the World** (Fitzhenry & Whiteside, $130), edited by Airan Gonen, is an immense (but not unwieldy) dictionary-style reference. It lists the planet's races, nationalities, tribes, and so on, from the Abadja ("a subgroup of the Ibo" of southeastern Nigeria) to the Zuni of New Mexico, one of the largest of the Pueblo nations of Native Americans, with a population of about 9000. Compiling such a book would be easy to do badly, but that's not the result here. The general editor has conducted a complex orchestra of regional and ethnic specialists and made the results uniform in density, clarity, and usefulness. One test for a work such as this is to see how much trouble the writers went to with whatever entries on Canada there might be. This encyclopedia passes the test. Its long list of specialists includes, for example, the regional development and economic consultant to the Gitksan Wet'suwet'en Nations of British Columbia.

• **From Pasture to Polis: Art in the Age of Homer** (Scholarly Book Services, $48.95 paper) is the catalogue, edited by Susan Langdon, of an important recent exhibition at the University of Missouri's Museum of Arts and Archaeology. It deals with the so-called dark age of Aegean culture, from about 1000 to 700 B.C., also known as the Geometric age "because of its characteristically abstract and formulaic approach to design." This was the Late Bronze Age, on which Homer drew for the *Iliad* and the *Odyssey*, composed in the 8th century BC. It was a time when people built the foundation of classic Hellenic culture "by exploring the past through art and poetry." The hundreds of objects, both everyday and religious, are used to point out the impending rebirth of Greek civilization, and were borrowed from famous museums around the world, including the ROM. A useful book to read at the same time is **The Trojan War in Ancient Art** by Susan Woodford (Cornell University Press, US$45 cloth, US$16.95 paper), which retells, in modern English, the legend of Troy (of which Homer used only a small part), keying the text to images from vase paintings, mosaics, and sculptures. Most useful for modern lay readers is the appendix of Greek gods, goddesses, and the like.

• **Macdonald Was Late for Dinner** (Broadview Press, $19.95 paper) by Patricia Beeson, a Torontonian who has studied cooking at the Ritz-Escoffier School in Paris, is far more than just the usual collection of old recipes. In travelling around Ontario to gather previously unpublished information about 19th-century dishes, the author discovered a lot of insights into the social history of the early British and Canadian military, the early African-American communities in the southwestern part of the province, and such relatively little-known ethnic groups as the Finns in Thunder Bay. The book is made even better by its skilled use of archival photos, including many remarkable ones the reader is almost guaranteed not to have seen reproduced before.

• Maria Tatar, a professor of German at Harvard, has become the new expert on the importance (and dangers) of fairy tales in western societies. **Off with Their Heads!: Fairy Tales and the Culture of Childhood** (Princeton University Press, US$24.95) is the one of her new books that gives freest reign to the results of her research and reappraisal. Unlike Freud and, later, Bruno Bettelheim, she doesn't see these ancient bedtime stories as entertainments or as reflections of the general ills of the grown-up world. She sees them rather as a kind of conspiracy against childhood, handed down through the generations to enforce conformity and adherence to adult values. To reach this conclusion, she takes the reader on an historical tour of the fairy tale as a literary form. To go back to the original texts of, say, the Brothers Grimm, is to be startled by the amount of incest, murder, cannibalism, and other nastiness deliberately spilling over from the adult world.

DOUGLAS FETHERLING
Douglas Fetherling is book review editor of Rotunda

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4. Masters Gallery IFC
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LETTERS

Bravo for Inge-Va

I am writing to say thank you. I have never read a more interesting article (that I can remember, anyway, in all the time that I have subscribed to *Rotunda*) than "The Tragedy of Inge-Va" (*Rotunda*, Volume 26, number 4, Spring 1994). It was so well written and the explanations of past circumstances seemed to flow together to form in my mind a clear picture of events.

Please may we have more articles from this lady in future issues. Thank you.

HEATHER LACEY, TORONTO

Bermuda Explorations

I was very interested in the Fall '93 issue article about exploring Bermuda's underwater mountainside by Dale Calder (*Rotunda*, Volume 26, number 2, Fall 1993). There are suggestions that *Alvin*'s dives were the beginnings of the explorations of Bermuda's very deep waters. In 1934, Dr. William Becke, my grandmother's cousin, dove to a depth of 923 metres off the Bermuda coast in a rather crude diving bell called the "Bathysphere." His findings were documented in a number of scientific journals and in his book *Half Mile Down*, 1943. Even now the Bathysphere is on display in a small museum on the Island.

DANIEL E. SULLIVAN, OAKVILLE

More Royal Furniture

I received my spring issue of *Rotunda* yesterday and surprise, surprise, there was your reply to the British Columbia reader about their "Royal Furniture" sideboard.

In 1960 or 1961 my wife and I attended an auction at the Ward-Price Galleries on College Street in Toronto. That particular evening they were auctioning off part of the estate of the Thorn family of Forest Hill Village. One of the lots was the master bedroom suite, which consisted of twin beds, a bedside table, a man's highboy, a lady's vanity, a lower dresser, and two large oval plate-glass mirrors. To make a long story short, we bought the suite. It was identified by a brass medallion recessed into the side of each drawer as "Royal Furniture" made by Robert W. Irwin.

The auctioneer stated that the suite was purchased by Dr. Thorn at the Chicago World's Fair in 1893 and had been made in Grand Rapids, Michigan. It purported to be part of the Robert Irwin Furniture Company display at the fair.

We used the suite on a day-to-day basis for about 30 years and disposed of most of the pieces in 1990 at Waddington's, prior to our move to Newfoundland. However, we were particularly fond of the vanity, which we have kept. By the way, you are right about the finish. Our piece has a "French polish" shellac-based finish that is soluble in methyl hydrate.

I thought that you, or the British Columbia reader, might be interested in knowing that other readers of *Rotunda* also own "Royal Furniture."

J. H. B., ST. MICHAEL'S, NFLD

ROM Answers

Dear ROM Answers,
I am writing to enquire whether or not you see any significance in the decoration on the base of this silver pickle cruet. The ring holding the base of the bottle is decorated with low-relief panels showing a bat, a lobster, a lizard, and a frog, which seem strange decorations for a pickle cruet. Your opinion would be appreciated.

D. M., Sault Ste. Marie

(For those readers of Rotunda *who don't know what a pickle cruet is, it is a glass jar with an electroplated silver cover, stand, and a ring handle that rises over the jar. Most have a hook to one side of the handle to hold a pair of ornate tongs.)*

Dear Reader,
Although the decorations may seem strange to modern-day eyes, they were typical of the range of designs used during the 1880s and 1890s. The small rectangular panels with their checkerboard backgrounds and the low-relief creatures are inspired by Japanese decorative arts. Western artists and designers were greatly influenced by Japanese applied arts, which were often decorated with small reserve pictures and areas of busy patterns somewhat resembling Japanese brocades. Bats, lobsters, lizards, frogs, cranes, carp, sparrows, ducks, and other creatures often appeared in Japanese decoration. Around 1880, Japanese-inspired designs were very popular with manufacturers of silver and silverplate in the United States and in Canada, where factories often imported the American base metal mounts to be finished and electroplated for sale. These motifs appeared right up to around 1900, sometimes because the manufacturers continued to use the same component parts and combine them in different ways to make new models. Like many late Victorian decorative arts, silver combined motifs from a number of sources. The floral finial at the top of your pickle cruet may have been inspired by something Indian or Egyptian. Egyptian papyrus motifs are found in the relief band at the base of the cover.

You are lucky to still have the tongs that were made for your cruet. Between the 1880s and around 1910, most British-Canadians owned at least one pickle cruet. In well-run homes, the women of the house made preserves, which included cucumber, watermelon rind, and other pickles. These were served to company from cruets at dinner. The glass for the pickle jar varied greatly. Yours has pressed colourless glass in a pattern resembling cut lead glass. This was a usual type; however, you could buy more expensive examples with fancy coloured glass from stores and the Eatons catalogue. Several examples in mother-of-pearl and satin glass are exhibited in the new Sigmund Samuel Canadiana Gallery at the ROM. Because of public fascination with late Victorian glass, pickle cruets have been reproduced since the 1970s. The reproductions are made in a limited range of opaque coloured glass, and the details of the metal mounts are not as sharp as on old ones like yours. Thank you for sharing your pickle cruet with our readers.

Peter Kaellgren, European Dept.

If you possess furniture, silver, glass, metalwork, ceramics, textiles, or small decorative objects that may have an interesting past and have aroused your curiosity, this column is for you. Send a clear black-and-white photograph (or 35-mm colour slide) of the object against a simple background, providing dimensions, a description, any markings, or any known details of its history to: ROM Answers, c/o Rotunda Magazine, *Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6. Be sure to enclose a stamped, self-addressed envelope large enough to include any photos that we must return to you with the reply.*

Neither Rotunda *nor the author nor any other person who may be consulted assumes any legal responsibility for these opinions or their ramifications. No financial appraisals will be offered. If your query is selected to be published in the column, only your initials and city will appear to protect your privacy. Letters will be acknowledged as staff time comes available.*

Shirt Tales

IT'S NOT THAT THE ROM'S LEFT HAND DOESN'T KNOW WHAT its right hand is holding, it's just that the hands hold so much. One of the good things about this situation is that there is a wonderful surprise when associations can be made between presumably unrelated collections. Such was the case when Arni Brownstone of the Museum's Ethnology Department saw the Notman & Fraser costume ball photo in the portrait room of the new Sigmund Samuel Canadiana Gallery. He noticed that one of the guests was wearing a fringed shirt that is now in the Museum's Ethnology collections.

The shirt was presented by Sweet Grass, principal chief of the Plains Cree, to Lieutenant Governor Alexander Morris at the signing of Treaty Number Six at Fort Pitt, Saskatchewan, in 1876. It is a large garment, obviously designed for the six-foot-tall Morris rather than for the diminutive chief, and is made from Hudson's Bay Company wool-trade cloth and decorated with beadwork and ermine-skin fringe. Ermine skin denotes the shirt's ceremonial status.

In 1913 Edmund Morris donated to the ROM the Indian material that his father, Alexander, had acquired while acting as the Crown's principal negotiator of Indian treaties. Included in the donation was the shirt. The identity of the man wearing the shirt in the photo is not certain.

PHOTOGRAPHS BY BRIAN BOYLE

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Fred Lehner

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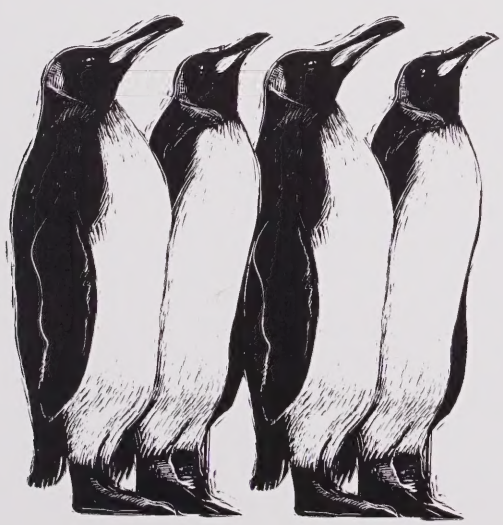

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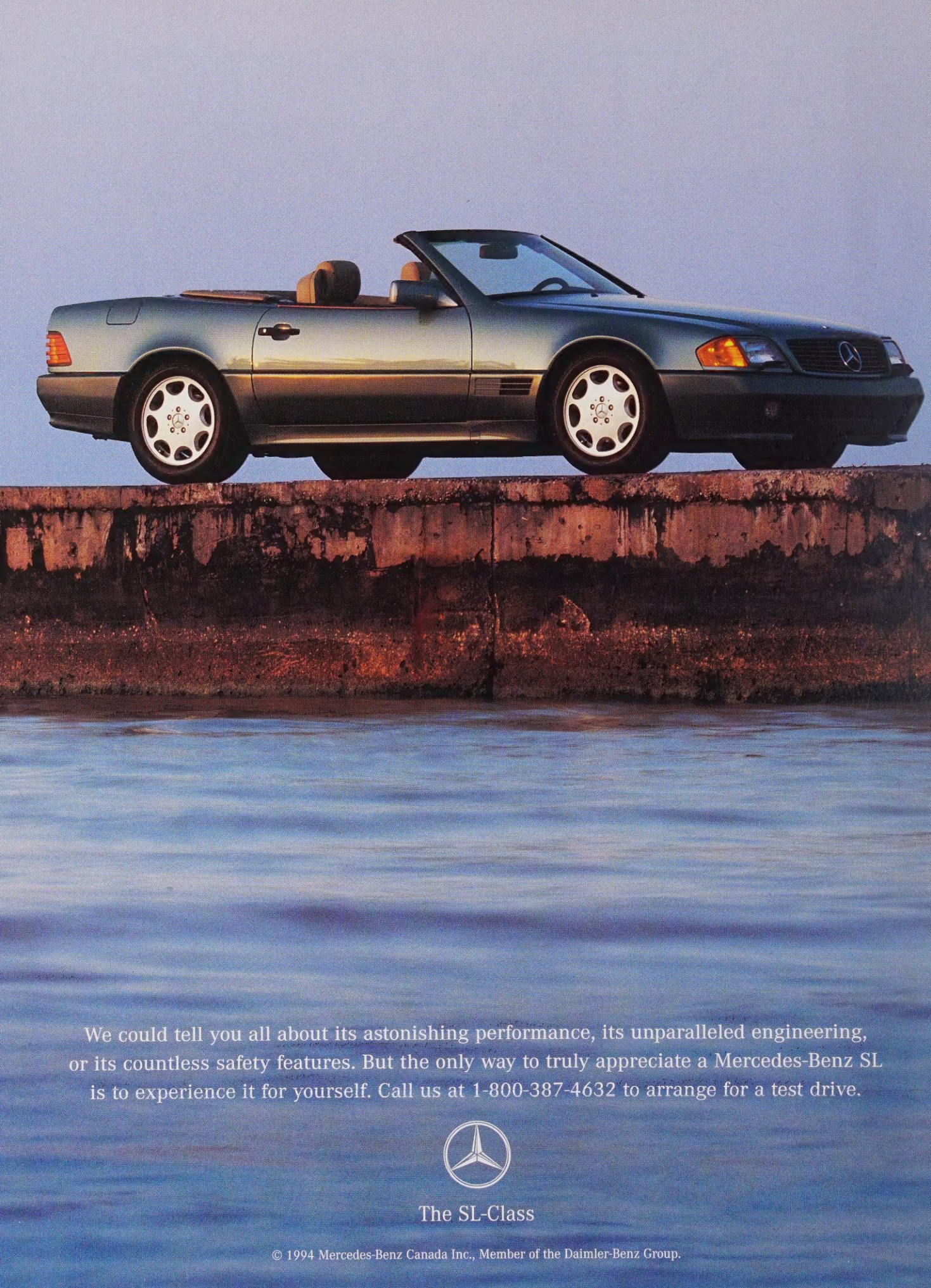

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